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Two Brazilian hydropower projects, Cana Brava and Dona Fransisca, which closed within six weeks of each other, offer qualified comfort to sponsors waiting to bring their projects to the market. However, several issues, which will be much harsher for gas-fired developers, have yet to be resolved. And the two deals, from separate sponsors, have had to overcome hurdles in different ways.

Cana Brava

The 415MW Cana Brava hydroelectric deal, which closed on 8 December 2000, is billed as the arrival of the project finance structure to the Brazilian energy sector. However, consensus has it that uncertainty over the future ownership of offtakers is the main stumbling block to closure, and Cana Brava's owner has provided a simple solution ? own the purchaser.

The dam is located 250km north of Brasilia on the Tocantins River, between the municipalities of Minaçu and Cavalcante, and will provide electricity for customers in the centerwestern, northern, and northeast regions. These are some of the less developed parts of the country, and consequently attract attention from the Inter-American Development Bank (IDB) and Banco National de Desenvolvimento Economico e Social (BNDES). The project requires the construction of a dam 1.450km long and 66m high, and the creation of a reservoir of 139km. In addition, a 50km, 230kV transmission line will be built between Cana Brava project and an interconnection facility at Serra da Mesa, located upstream.

Tractebel, the Belgian generating subsidiary of Suez Lyonnais des Eaux, views the project as a good vehicle for the expansion of its Latin American operations. It already owns the electricity generator and distributor Gerasul, but has not previously been able to go ahead with project financing assets because of the difficulty of matching real-denominated tariffs to dollar debt. Gerasul comes with 2724MW in hydro assets, 1075MW in thermal assets, and another l 3430MW in construction, Cana Brava included.

Gerasul is vital to the project's financability, and was sold by the Brazilian government at the same time as the project's tender was awarded. Tractebel now holds over 70% of Gerasul ? a useful potential offtaker and hedge. It is also the only means of finding a solid purchaser for the plant's output, since government guarantees are not forthcoming in Brazil and few distribution companies are in sufficiently robust financial health.

Tractebel is using, therefore, the stable cashflows of the Gerasul subsidiary to beef up the creditworthiness of a hydro project at a time of transition. Distribution companies are guaranteed a fixed price for a few years but after the end of this period it will be difficult to predict the direction of prices. Weather volatility is the main determinant in a market dominated both in terms of capacity (95%) and production (98%) by hydro assets.

Financing comes from the IDB, in the form of a $75 million A loan and a $90 million B loan, and R180 million ($92 million) from BNDES. The sponsors put in $150 million in equity, whilst the participants on the B loan were ANZ Investment Bank, Dresdner Bank and Fortis Bank. The commercial banks first started looking at the deal in mid-1999. As one source close

to the deal put it ?the assumptions that we had about the way the power sector would develop at the start of the project tended to have been drastically altered by the end of the deal?.

The key comfort issue for the lenders is still the risk of a devaluation in the value of the Real ? very much a possibility despite bullish sentiment in terms of economic growth for the country. There exists no formal mechanism for operators to pass on any slump in the value of real denominated power purchase agreements to consumers. For Cana Brava, Tractebel has had to take this risk ? the only indexation permitted is with respect to inflation.

The borrowing mismatch also exists with the use of funds, since almost all of the work to be done on the plant, as well as its components, are charged in Reals. Moreover, although BNDES, long the mainstay of development activity in the country, has been very supportive and has good long-term capacity for project debt, it has a few documentation issues that can prolong finance. For instance a separate loan document is used, using Brazilian law, and agreements must be written in Portuguese.

Dona Fransisca

Dona Fransisca has also taken on the appearance of a project finance deal, although at present, like Cana Brava, it has features that take it some distance from the non-recourse paradigm. This $118 million hydro project, however, has local sponsors and, soon, one of the strongest offtakers around ? Enron. The power trader (and occasional developer) wants to position itself for deregulation by building up a physical capacity hedge in Brazil. It already owns a balance-sheet constructed thermal plant that, in the words of one observer, ?has made a killing for them on the spot market?.

Sponsors for the 125MW project are local construction group Gerdau (21%), Inepar Energia (30%), Centrais Electricas de Santa Catarina (Celesc, 23%), Companhia Paranaense de Energia (Copel, 23%) and consultants Desenvix (2%). Project company Dona Francisca Energetica signed a concession agreement with the Brazilian government on 28 August 1998 for 35 years. The plant is located on the Jacuí River, in the State of Rio Grande do Sul.

Brazil is still working towards a legal framework that can adequately protect security interests for lenders. At early stages the project was envisaged as a lease financing, after the model of the recent Petrobras deals. Although the tax benefits would have been substantial, such an arrangement would have been possible only if an offtaker or other interested Brazilian entity was prepared to take on the ownership. In an case, tax laws in the country have recently changes and the fragmented ownership of the plant would have made this impracticable. The ownership issue has been structured as a negative pledge to give lender sufficient comfort.

The offtake agreements, however, have yet to be signed, so until a firm agreement is inked the loans will be recourse to the sponsor. The documentation has been structured to allow the loan to flip to limited recourse as soon as this happens. Enron is tentatively slated to take 77% of the output, with Celesc, still in state hands, the remaining 23%. Enron already has stakes in several regional gas distributors, controls southern distribution company Elektro, and as plans for a cross border interconnection/generation project with Bolivia.

By dealing with private sponsors and a majority private customer base, the plant has obtained financing from the IDB's private sector department, which has put up $41 million in loans for the project. This breaks down into $16 million from the bank's ordinary capital and a syndicated loan, under the IDB's umbrella, of $25 million. This is arranged by Dresdner Kleinwort Wasserstein and Hypovereinsbank, who each take $12.5 million. The two banks have been working on the deal since May 1999 and, despite the time-consuming nature of the deal, will have found the experience of finding financing solutions in the fluid Brazilian power market invaluable.

Philipp Reimnitz, from head of project finance for Latin America for Hypovereinsbank says ?Dona Francisca's financing has been fast-tracked because of its committed sponsors. We have a lot of confidence in this project, because as a hydroelectric project there are no imports and therefore less devaluation risk. The economics are also very favourable

because of the projected demand for electricity in Brazil?. In a financing climate where the World Bank and government lenders are reconsidering their approach to such projects as the Illisu Dam and Three Gorges project, Brazil's ability to get hydro deals done is all the more surprising.

The BNDES has also provided $37 million in long-term financing, with Bradesco also providing finance on this side. Again, the domestic institutions went through the same process of bringing the two sides' documentation closer, and those close to the transaction say that the work done on Cana Brava at the IDB and BNDES was a useful first step.

The lessons for gas-fired developers

Brazil's vast size has led to the development of the pool system, where plants are grouped together in various regions, and facilities with capacity available in excess of their assured capacity level will pass on to those with a shortfall. This system means that hydrology risk is largely mitigated since power is passed on at marginal cost and private and state generators can work alongside each other.

But the Brazilian government has said that it wants to increase the use of thermal power sources in the country, despite a geographic diversity that minimises some weather risk. Running at least some gas-fired capacity would be a useful way of building up a baseload element to the country's generation suite. Supply problems persist, however, because Brazil, in particular the interior, continues to rely on supplies from across its borders, including the Bolivia-Brazil pipeline. High gas prices make such projects less viable when gas-fired power cannot compete.

It would be very difficult, for instance, for gas to be accommodated within the assured capacity system, if only because it would be hard for thermal plants, which have to take into account fuel costs, to be public-spirited in making up ? at marginal cost ? hydrology shortfalls elsewhere. The government has yet to come up with a solution to easing merchant thermal plants into this equation. Still Mexico provides a useful lesson to sponsors waiting on the wings of the continent's latest hot market ? soaring demand tends to create new orthodoxies.