

# Rio do Fogo windfarm project

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**There are a handful of frameworks through which governments can incentivise the private sector to develop renewable projects but the predominant approach essentially comes down to the age-old 'stick and carrot' proverb**

They either mandate developers to ensure a certain proportion of their energy mix comes from renewable sources, or they provide renewable projects with tax credits.

These are the approaches pursued in Europe and the US respectively. But under its PROINFA programme, Brazil potentially goes further than its North American counterparts, guaranteeing long-term offtake agreements and preferential access to public funds in a unique arrangement which is more of a sweet cana de açúcar (sugar cane) than a boring old carrot.

And Spanish developer Iberdrola was clearly drawn by the sweetener, having closed the 50MW Rio do Fogo wind project in Brazil's Rio Grande do Norte state in a strategic bid to retain its lead as the world's foremost wind developer.

As the second wind project to be built under the programme, the company is getting its foot in the door as the Brazilian renewables market opens up, by investing in a project with little regulatory risk and a guaranteed, steady revenue stream.

## **Rio do Fogo and PROINFA**

Phase one of Brazil's PROINFA - the 'renewable energy incentives programme' - has as its aim the installation of 3,300MW of renewable power over the coming years, split equally between wind, mini-hydro (<30MW) and biomass.

That incentive structure is made up of long-term, fixed-price PPAs with the state utility Eletrobrás for up to 70 per cent of the contracted energy, paid on a monthly basis in local currency.

The structure has the further bonus of allowing the developer to obtain up to 80 per cent of the project financing from BNDES - the development bank - a matter which I shall return to later.

The law was created by the Cardoso administration in its last year of office (2002) and revised subsequently by the Lula government in November 2003.

The amendments reflect the new government's more interventionist approach to the energy market, together with its greater focus on anti-poverty measures.

Firstly, the law mandates that a majority of the project equipment must be procured locally - Rio do Fogo is being built by Wobben Windpower, a Brazilian subsidiary of the German firm Enercon. Secondly, those on lowest incomes will not have to pay rates for the new energy which comes online. The other significant change related to the increase in the number of states involved in the programme.

Projects are permitted on a staggered basis, according to when the strategic plans were approved by the authorities - Rio do Fogo is the second wind farm to fall under the programme, following the 150MW Elecnor project in the southern-most state of Rio Grande do Sul.

One of the reasons behind this step-by-step approach is the relatively small number of staff working on the programme within the regulatory institutions - BNDES for example only has about 6 personnel, including technicians and lawyers, to review projects, meaning that they are seen and implemented one after another on a case by case basis.

#### **Regulatory risk low**

Unlike the experiences of project companies in other energy sectors, which suffered from limitations on fuel supplies and subsequent breaches of the PPA (see TermoFortaleza CCGT case study), wind projects under PROINFA will encounter relatively little regulatory risk:

'The main [challenge] is getting the project under PRONIFA, once you're in PROINFA its ok...dealing with a public bank and a public utility your negotiating capacity is small, but once you accept that, its ok....I don't see the same kinds of problems happening with wind as happened with thermoelectric projects,' said Javier Valle, partner at Uría Menéndez in São Paulo, who acted for the sponsor.

Valle and Rafael Dutra, at Uría's local associates Dias Carneiro, found it difficult to envisage a situation in which the 20-year PPA on Rio do Fogo - which follows a blueprint for all wind projects under the programme - could be cancelled.

The only situation they could imagine was if it were deemed to be against the public interest, a fact that the partners agreed seems a pretty remote possibility. Such a ruling would only result from extensive public hearings and would inevitably lead to the sponsor being duly compensated.

The other reason that the government is unlikely to disrupt Rio do Fogo is that not only is there a steady and guaranteed fuel source, which does not rely upon having supporting infrastructure in place (as was the problem with the thermal plants), nor that it is also providing much needed power to an energy deficient region, but they can also accumulate carbon credits through the project and potentially raise some more cash.

One of the provisions of PROINFA is that Eletrobrás, not the developer, gets to keep the carbon credits attributed to the projects under its remit. This market has fallen considerably recently, with EUAs (European Union Allowances) currently around the €12 (US\$15) mark, which is having a knock-on effect on the CERs (Carbon Emission Reductions) generated by individual projects in emerging markets, it is likely that it will pick up again (see [IJ Focus](#) - European carbon trading).

Eletrobrás has not as yet applied for credits for this project and is expected to to sell credits from a handful of projects at the same time and for an upturn. Once they do there is the possibility that they will share a portion with the EnerBrasil, according to Juan Bosco López-Aranguren, Iberdrola's head of structured finance for renewable energy.

#### **Structure of the project**

EnerBrasil is the project company, 100 per cent owned by Iberdrola's renewable arm - Iberenova - developing the US\$95.3m project, 60km north of Rio Grande do Norte's capital - Natal.

It is one in a line of investments which the Basque company has made in Brazil, but the first one which is developed entirely by them, with previous projects having been joint ventures with Banco do Brasil and its pension fund PREVI.

It has a 20-year fixed-price PPA with Eletrobrás, which is attractive, but López-Aranguren was a little gloomy about the tariff itself:

'The tariff is profitable for this specific project but we originally had up to 200MW in the pipeline,' he said. 'We are not rushing to sign any more PPAs...Elecnor will try to sell projects in a few years time to get profit, but Iberdrola want to be there long-term...the tariff is not good enough to ensure good profitability.'

There is US\$33.3m of equity, of which the IFC is investing US\$5.5m. The US\$62 debt is provided by BNDES, as explained earlier, with half as a direct loan from the bank and half arranged on an onlending basis, which is normally lent at a 0.5 - 0.75 per cent higher margin.

This is a standard structure for PROINFA projects, where the onlending bank must be licensed in Brazil - that means all big regional banks, federal banks and public banks are eligible, as well as some of the big international names like ABN AMRO - which is involved in this particular deal - and Santander.

The long-term interest rate (TJLP) is currently 8.150 per cent, so pricing of TJLP plus 3.5 per cent on the direct loan may not sound like such a good deal, but as Brazilian interest rates are amongst the highest in the world, this is one of the more attractive Reais-based financings available out there.

The debt has a 12-year maturity and a 1-year grace period, the project has a three-month reserve account and a generous DSCR of 1.3.

López-Aranguren explained that obtaining long-term financing in Brazil is impossible without BNDES assistance, the only other option being debentures (bonds) which are normally 7-years maximum and expensive for greenfield projects.

The construction period will be nine months. Of the 52 turbines to be built, 27 are now in operation and the rest are due to be completed by the end of June. The EPC contractor, Wobben Windpower, is contracted to maintain the turbines for 7 years. After that date, the agreement may be extended or Iberinco, an Iberdrola subsidiary, may take over.

#### **Outlook for the future**

With Rio do Fogo completed and a mini-wind project in the central state of Minas Gerais due to close in the next few weeks, Brazilian wind is slowly being propelled into action.

We can expect to see further involvement of the IFC and other multilaterals, not just in wind, but biomass and mini-hydro, keen as they are to invest more in renewables and energy-efficient projects in order to meet Kyoto requirements.

Morgan Landy, manager of renewables at IFC told IJ News he was optimistic about the Brazilian renewables market and that their involvement in the key markets of Brazil, India and China is spurred on by three conditions there:

- A strong regulatory framework
- A private sector interested in committing long-term funds
- Country being at a critical mass to ensure a long-term series of projects

The full-hearted commitment of the Brazilian government to renewables projects through a programme as well-designed as PROINFA is a welcome development, it will reduce carbon emissions that would be generated from equivalent-sized fossil-fuel powered plants, while providing power to energy deficient regions and stimulating economic growth.

Low carbon emissions energy is not a new phenomenon in Brazil, where the majority of energy is already sourced from hydro and ethanol is representing an increasingly attractive alternative to fossil fuel-based vehicles. The advantage of the PROINFA projects being that they are more socially and environmentally sensitive than mega-hydro.

The challenge to the Brazilian government is whether they will be able to keep tariffs high enough to ensure investment, but low enough to make power accessible to the vast proportion of the population living below the poverty line.

And while in the past Brazil has suffered from an excess of red tape (the former military government even created a Ministry of Debureaucratisation to address - or compound - the problem) it might be asked whether a team of six at the BNDES is enough to get that much needed power on line, on time.

Project Name	Rio do Fogo Wind Farm
Location	Rio do Fogo municipality, Rio Grande do Norte state, Brazil
Description	49.3MW wind farm
Sponsors	Iberdrola
Operator	EnerBrasil (100 per cent owned by Ibernova)
EPC Contractor	Wobben Windpower (Enercon subsidiary)
EPC Sub Contract 1	Iberdrola Consortoria
Maintenance	Wobben Windpower (2+5yrs)
Construction Stage	9 months
PPA	20-year with Eletrobrás
Total Project Value	US\$95.3m
Total equity	US\$33.3m
Equity Breakdown	Iberdrola US\$27.8m IFC US\$5.5m
Total senior debt	US\$62m
Senior debt breakdown	BNDES US\$31m (direct loan) ABN AMRO US\$31m (arranged on an onlending basis)
Senior debt pricing	BNDES direct loan: TJLP (8.150%) +3.5% ABN AMRO: 0.5-0.75% higher
Debt:equity ratio	65:35
Mandated lead arrangers	ABN AMRO
Maturity/Grace Period	12 years/1 year
Repayment cover ratio	1.3
DSRA	3-month
Legal Adviser to sponsor	Uría Menéndez Dias Carneiro (local)
Financial Adviser to sponsor	ABN AMRO until took ticket, then in-house
Legal adviser to banks	Veirano (IFC) ABN AMRO/BNDES (in-house)
Date of financial close	30 March 2006

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