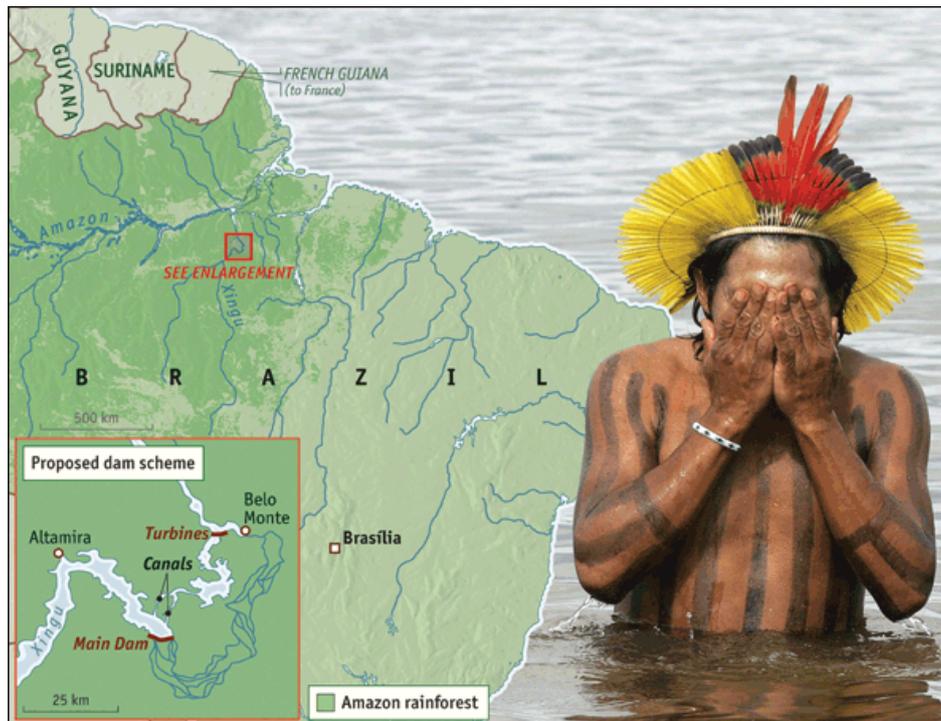


Power and the Xingu

A huge Amazon hydropower project shows how hard it is to balance the demands of the environment and of a growing and prospering country.



PROTESTERS in paint and headdresses in Brasília, warring tribes of lawyers and a mountain of pig dung: yet another giant Brazilian public-works contract was up for grabs, and the lobbies were restless. After the courts struck down an avalanche of eleventh-hour injunctions, late on April 20th a consortium of contractors won the right to build Belo Monte, a huge hydroelectric power station to be raised on the Xingu river in the eastern Amazon basin.

The victors—led by Chesf, a state-owned hydropower generator, and several construction firms—celebrated quietly and quickly. Their discretion was understandable. Waiting outside the auction room at Brazil's power regulator was an angry mob, kitted out in overalls and warpaint, and three tonnes of fresh manure, courtesy of a local pig farm. "Belo Monte de Merda" read the banner in the ripening heap.

But Brazil's rapidly growing economy needs more energy, preferably renewable. The scale of the dam—it will be the world's third-largest hydroelectric station after China's Three Gorges and Brazil's own Itaipu—is epic. So is the investment, of at least 19 billion reais (nearly \$11 billion). But ever since the engineers in Brasília rolled out the blueprints for damming the Xingu two decades ago, the project has attracted powerful opposition.

Environmental groups and river dwellers say Belo Monte will flood vast patches of rainforest while desiccating others. "The forest is our butcher shop, the river is our market," Indian leaders wrote in a newspaper. They were aided by greens from Europe and the United States, including the tribes of Hollywood. James Cameron, a film director, flew in to daub his face in red paint, hug an Indian and join the protest.

In his past as a labour leader, Luiz Inácio Lula da Silva, Brazil's president since 2003, might have joined them. Now he has a legacy to mind. Belo Monte is the centrepiece of the government's ambitious public-investment programme—the flagship initiative of Dilma Rousseff, his former chief of staff and would-be successor, who faces a tough fight in October's

presidential election against José Serra, the main opposition candidate. As president, Lula has shown little patience for tree-huggers (see article), never mind grandstanding gringos. "They don't need to come here and give us advice," he snapped.

Yet greens were not alone in their lack of enthusiasm for the project. Some of the country's leading builders, such as Odebrecht and Camargo Corrêa, pulled out of the auction, convinced that the government-dictated power rates, capped at 83 reais (\$47) per megawatt-hour, were too low to assure a fair return on their investment. (The winning consortium offered a slightly lower rate.) The government had to pledge billions of dollars in soft loans and tax breaks to lure bidders. Even so, two firms in the winning consortium immediately dropped out, apparently because they thought the tariff too low.

Not since a military government quartered the Amazon basin with roads, dams and settlements in the 1970s has Brazil seen such a row over the rainforest. Ironically, Belo Monte is a project shaped by the lessons of the past, drawn and redrawn to cull the power of the forests without razing them. That challenge—developing the wilds and having them too—is in many ways the riddle of modern Brazil. The rest of the developing world is watching closely to see whether it can be solved.

A generation ago similar protests over an earlier version of the same dam—known then as Kararao—forced officials to rethink their strategy. They came up with Belo Monte. It was not just a marketing ploy. Instead of building a great wall across the Xingu to create a massive reservoir, Belo Monte is designed as a run-of-river dam, a technique that harnesses the natural flow of the river to drive the turbines.

The new version will still flood a lot of forest: a reservoir of 516 square kilometres (200 square miles) will leave scores of villages awash and force thousands from their homes. But that is a third of the area that the original dam would have inundated. The consortium has committed to help relocate the displaced and patch up any damage to the environment.

But these environmental safeguards will also curb Belo Monte's capacity to generate power, which will vary with the flow of the Xingu. When swollen by the rainy season, the river will cascade through the turbines, turning out up to 11,200 megawatts—adding 10% to Brazil's existing generating capacity. But during the dry Amazon summer, when the Xingu shrinks, Belo Monte's assured output will plunge to an average of 3,500-4,500 megawatts. Add in the likelihood that the rate cap leads to escalating subsidies, and no wonder that some Brazilians wonder whether an all-too familiar species has re-emerged in the Amazon: a white elephant.

But with the economy set to grow by up to 7% this year, and tens of millions of Brazilians consuming more after leaving poverty, investing in more power generation is essential. The protesters want smaller wind or solar plants. But without Belo Monte, Brazil would probably have to build nuclear power plants or invest in coal-fired thermal energy. And then the protests would no doubt be even bigger.

Correction: Belo Monte dam

In a recent article ("Power and the Xingu", April 24th), we stated that the Brazilian government had set a maximum sale price for electricity produced by the Belo Monte dam of 83 centavos per megawatt-hour. In fact, the price is 83 reais per megawatt-hour, which is 100 times greater. We apologise for the error.

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