

Complex Project, Mega Risks

Financial Risks
of Rio Madeira Dam Complex



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1. Executive Summary

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The Rio Madeira Hydropower and Waterway Complex is the main infrastructure work of Brazilian Government's Plan for Accelerated Growth (PAC), encompassing two large dams and associated canal locks to permit navigation. This document analyses the project's main financial risks, given the information available and its social, environmental, technical, legal and economic uncertainties.

As in any large scale project, financial risks and returns must be thoroughly estimated, given the possibility that small errors may bring severe damage to project sponsors, financiers and society at large. Such thoroughness becomes even more relevant in the case of Rio Madeira Complex, being a project developed far away from the main urban centres, in a region rich in biodiversity as the Amazon, although with a lack of social infrastructure. Historically, all large infrastructure projects in the Amazon have suffered from significant delays, and some of them have never been completed.

The dams' environmental licensing process was very controversial, subject to strong political influence and contradictory technical opinions about the project's economic feasibility and its associated social and environmental impacts. This report does not intend to bring new facts nor technical data to feed the debate. Its contribution stems from deep analysis of the broad material already produced by project sponsors, NGOs, local communities, Public Prosecution Office, independent experts, Ibama and other national and international governmental bodies. The approach strives to translate available information on social and environmental risks into financial risks, using the methodology of credit rating agencies. Furthermore, it was included an annex with the reputational risks of participating in such a project, either as project sponsor, financier, contractor or supplier.

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The main sources of financial risk identified in the Rio Madeira Complex are:

- Governance risk, given the potential participation of constructors and equipment suppliers in the project sponsoring consortia, at the same time of forming the Engineering, Purchasing and Construction (EPC) group responsible for executing the works, what poses a conflict of interest.
- High construction risk, mainly due to the weak judicial grounds for the environmental license, already being challenged by the Public Prosecution Office. The impacts of canal locks were not studied and the transmission line was removed from the

licensing during the process. There are contradictory technical assessments about the project's area of influence, impacts in Bolivia, indigenous lands, involuntary resettlement and flooded area.

- Uncertainty on total costs, with dissonant budgets presented by project sponsors and regulator, deepened by the undefined environmental compensation fee and exchange rate risk in the price of equipments.
- Legal risk associated with the tender offer for the dams. The exclusivity contracts of Odebrecht with main equipment suppliers are being contested at CADE, Brazilian and US Courts, bringing unpredictable consequences given the long time needed to judge such disputes.
- Client risk, as the transmission line project is still in a very infant stage. It is vital to ensure the delivery of produced electricity to the South-eastern region, but does not even have the Terms of Reference for the Environmental Impact Assessment, suggesting a long and litigated process of environmental licensing.
- Technological and hydrological risks, also in the mid and long term, due to uncertainties on the impact of sediments over the reservoirs, the lack of studies about possible changes in the climate regime and rainfalls, affecting water flows and reservoir capacity.
- Risk of financial structure and insufficiency of collateral. There is a need for a pool of insurers and reinsurers with strong balance sheets. If BNDES indeed finances the project, all remaining debt deals will be subordinated to the development bank deal.

2. Project Description

The Madeira River is the largest tributary of the Amazon River, with a length of 1700 km in Brazilian territory alone and an average flow of 23,000m³/s. The Madeira is responsible for approximately 15% of the water volume and 50% of the sediment transported by the Amazon River to the Atlantic Ocean. This enormous load of sediment regulates the biological systems of vast flood plains along the Madeira and Amazon Rivers. Its basin covers close to a quarter of the Brazilian Amazon, and stretches over 1.5 million km² across Peru, Bolivia and Brazil. The river is formed by the confluence of the Guaporé, Mamoré and Beni Rivers, which originate in the Andean high plains.

The Rio Madeira Dam Complex is the main project of Brazil's government Program for Accelerated Growth (PAC) and a fundamental piece of the Initiative for the Integration of Regional Infrastructure in South America (IIRSA). This complex includes the construction of the Jirau and Santo Antonio hydroelectric power plants in the Brazilian Amazon, with a joint capacity of 6450MW; a third dam in the stretch between Abunã, in Brazil, and Guayaramerín, in Bolivia; and possibly a fourth hydroelectric dam at Cachoeira Esperanza located on the Beni River, 30km above its confluence with the Mamoré River in Pando, Bolivia.

The completion of this complex of dams with locks would allow the operation of an industrial waterway, to allow the passage of barges, extending 4200 km. This will facilitate the transportation of goods such as soy, timber and minerals from the Amazon region to ports on Atlantic and Pacific coasts.

This project currently being promoted includes the Santo Antonio and Jirau dams. Santo Antonio is located 7 km upstream from Porto Velho, the capital of the state of Rondonia and home to more than 270,000 inhabitants, and Jirau is 136 km further upstream. The combined area estimated to be flooded is 529 km². The respective canal locks are also part of the project.

Financial Structure

In such large scale projects, it is common that a consortium of companies form a Specific Purpose Enterprise (SPE), a legal entity whose activities must remain restricted to the construction and operation of the dams. This model allows debt issues of the project finance type, whereas the main collateral offered to financiers is the cash flow generated by the sale of electricity upon the power plant becomes operational, thus protecting the balance sheets of shareholders to the financial risks associated to the project.

In the case of Rio Madeira dams, construction costs will most likely be beared by 20% to 30% of equity and the remaining 70% to 80% covered by project finance deals or syndicates. In order to build the equity of the SPE, some consortia might structure private equity funds and distribute these to institutional investors.

3. Project Sponsor Risk

The quality of project sponsors is of paramount importance to the success of this kind of deal. The characteristics analysed are the experience of sponsors in similar projects, the technology employed, sponsor's commitment to the project and its strategic relevance, along with credit worthiness and financial strength.

The potential project sponsors, to be defined after auction scheduled to December 2007, seem to have financial capacity and strategic interest. There is doubt about the technology employed, because bulb turbines were never used before in such a large scale project. The sediment load carried by Madeira River brings another risk to the technology (more details in Operating Risks). Some consortia are considering changing the project design in order to use Kaplan turbines, which would decrease costs but add extra environmental and legal risks.

The possible auction framework and rules, as promoted by the Brazilian government, will request the deposit of minimum cash guarantees in order to avoid project sponsors without adequate financial capacity. Some possible consortia are:

- a) Odebrecht / Furnas;
- b) Camargo Correa / Chesf;
- c) Alusa / Eletronorte;
- d) Suez / Eletrosul;
- e) Cemig / CPFL / Light / Eletropaulo

This configuration can change at any time.

The government offered one subsidiary of the state-owned energy holding Eletrobrás to compose each consortium, which contributes to their financial capacity given the solid balance sheet of Eletrobrás. The winning SPE can opt for the inclusion of BNDESpar in its equity, or even pension funds such as Petros and Funcef, which have already demonstrated interest in the project.

A more thorough analysis will be possible only after the auction. There is a conflict of interest risk in some consortia, as they have construction and equipment manufacturing companies as shareholders, the same that would be responsible for the Engineering, Purchasing & Construction (EPC) contract. The National Energy Policy Council determined that such companies can only have 40% of SPE equity to enter the auction, reducing it to 20% in case of victory. This partially mitigates the conflict of interest, but has created a significant backstage battle.

4. Construction Risk

The construction risk is usually the most difficult to mitigate in a project finance deal. The possibility of delays, cost overrun and quality subperformance are analysed along with their respective impacts. The main drivers of risk are contractors hired to execute the works, the project timeline, budget and its environmental and legal risks.

Construction Consortium

Given that construction companies and equipment manufacturers are part of some consortia, it is very likely that shareholders will be the project executors. That would be the case for consortia led by Odebrecht and Camargo Correa. The Engineering, Purchasing & Construction (EPC) contracts are usually in the Turn-Key mode, with fixed prices and timeframes. Still, there is a clear conflict of interest that may damage minority shareholders. The government is aiming at improving the requirement for best-in-class corporate governance structures, but a final analysis will only be possible after the auction and hiring of contractors.

Construction Timeline

If the first power plant (Santo Antônio) is auctioned, gets the construction license and starts construction already in the meteorological window of 2008, the government forecasts that the first turbine can become operational by January 2012. This forecast can be considered highly uncertain and, moreover, of little relevance. In Brazil, the historical experience of building large scale dams has been unfavorable: nearly all had cost overruns and delayed timelines¹. Given the additional logistical challenges of building a large scale project in the Amazon region, the risk of delay is very material. Camargo Correa already claimed the impossibility of starting construction in 2008. Furthermore, delays caused by environmental, social and other forms of litigation are a real possibility, possibly pushing the project commencement to at least 2009. Many consortia already requested the postponement of operation to 2013, which has not yet been confirmed by the government.

Environmental and Social Risks

Within environmental legislation, the first step needed for construction of a plant is to obtain the Preliminary License (LP), allowing for the respective auction to be legally carried out. The process starts with the submission of an Environmental Impact Assessment (EIA) on the part of the companies requesting the license, based on Terms

¹ In the case of Tucuruí, the operation of the first turbine was delayed in 3 years; the last turbine became operation only in June 2006, more than 30 years after construction began.

of Reference set by the federal environmental agency (IBAMA). Usually, the LP is granted, along with a number of mitigatory measures or complementary studies that constitute a condition for the future issuance of a Construction License (LI), allowing for the work to start. Once the work is complete, turbines can only function once an Operation License is issued.

The LP for the Rio Madeira complex was granted on July 9, 2007 along with 33 conditions. While it alleges the project is environmentally viable, the process through which it was issued leads to significant legal and financial risks, even in situations where the LI was obtained. Both the public prosecutor and eligible civil society organizations can file lawsuits to suspend or cancel the licensing, also with possible request of urgent preliminary rulings to be made by the courts based on precautionary principles. Actually, there is already a civil lawsuit of this kind, initiated by the public prosecutor in December, 2006, based on earlier considerations, well before IBAMA granted the LP. This lawsuit can be subject to ruling at any time, even after the start of the project. Principal risks are detailed in the following paragraphs.

Defect in procedure

IBAMA's technical experts concluded their official report in March, 2007, recommending not to grant the LP due to the need for new studies. Among their arguments there was the need for widening the scope of social and environmental impacts, including the extension of the area of influence of the project in both Brazil and Bolivia. IBAMA's politically appointed directorate, following open and explicit political pressure, did not endorse the technical opinion of its own staff. Immediately afterwards the institution was split by presidential decree, which led to a strike. Once public servants were on strike, the new President of IBAMA used opinions by external consultants, hired by the Ministry of Mines and Energy and the World Bank, in favour of granting the license, with the aforementioned 33 conditions. It might well be concluded that the use of external consultants, with potential conflict of interest, instead of public servants formally hired by government through a legal selection process, has potential to void the entire process.

Area of influence

The Strategic Environmental Assessment carried out by Odebrecht, in the opinion of IBAMA's technical staff and that of 19 highly reputed experts hired by the Rondonia public prosecutor² (with financial resources from Odebrecht) are unanimous in pointing to the need for environmental impact studies in a much larger area of influence, which also affects a portion of Bolivia. In addition, only four public hearings (a requirement by legislation as far as all areas of impact are concerned) were held: all of them within the

² See a summary at "30 breaches to Madeira EIA", available at <http://www.banktrack.org/doc/File/dodgy%20deals/Rio%20Madeira%20Dam%20Project/Studies%20that%20dont%20hold%20water.pdf>

municipality of Porto Velho. No hearings were held in the municipalities where impacts are admitted by the EIA study itself, neither in the municipalities which were already neglected by the studies. The opinion on sediments by the consultant Sultan Alam, which was used to grant the license, was based merely on the analysis of Santo Antonio dam, assuming that results would be similar in the case of Jirau. Since the licensing is granted for the whole complex, problems that might be found in Jirau can delay the works in Santo Antonio. Recent legal precedents exist in Brazil establishing the need for an Integrated Basin-wide Environmental Assessment³ in other dams, attributing to IBAMA the responsibility for monitoring the implementation of its provisions.

Locks and Transmission Line

Two locks – one for each dam – allowing for expanding navigation along the Madeira River from the Atlantic Ocean up to Bolivia are part of the approved project. However, their impact was not researched. The resulting waterway would – according to the forecast by the Odebrecht-Furnas consortium – allow transportation of grains, thereby stimulating the expansion of the agricultural frontier, along with deforestation, land conflicts, and disorderly occupation of the region.

Similarly, the project implies the construction of a transmission line as far as Araraquara (São Paulo state), as a condition for energy to be used. However, the line was not subject to the studies for the licensing, an issue that was questioned by the federal prosecutor and likely to be subject to ruling in the coming months. This might be one more aspect leading to declare the auction void or, possibly, even paralyze the project at a later stage.

Bolivia

Bolivian government and civil society have repeatedly criticised the project, with similar arguments, principally lack of any study on impacts on the Bolivian side. Soon after the LP was granted, the Bolivian chancellor addressed the Brazilian Ministry of Foreign Affairs questioning the Brazilian unilateral decisions and requesting technical explanations. Brazilian government has not provided explanations as of yet, despite a meeting among the two diplomacies at the end of August, 2007. Three bilateral working groups were formed to study the issue of sediments and flooding, impacts on fish stocks and on public health (malaria and other diseases). However, their workplan and schedule were not yet defined. Civil society organizations from both Bolivia and Brazil already expressed their concern to their respective governments about participation in the working groups. The Bolivian vice-minister for biodiversity and the environment publicly stated that the country is ready to look after international *fora*, in case Brazil insists in making unilateral decisions affecting the Bolivian territory. Diplomatic impasse could result into new delays in works, especially as far as Jirau is concerned, also at a later stage.

³ Civil Lawsuit Nº 1999.70.01.007514-6/PR

Displacement of Population and Indigenous Issues

According to the EIA of the project, about 3.000 people would be forced to leave their livelihoods. Considering the reality of other dam projects in Brazil, the absolute lack of legal land titles in the whole region of the project and the limited scope of the EIA, this figure is likely to be underestimated. Local social organizations, for instance, estimate 10.000 affected people. In addition, economic displacement is likely, since fishery potential and land fertility in other areas were not adequately studied. Such a situation can lead to a number of legal conflicts, with impacts both on project costs (additional indemnizations) and on its operational schedule, due to precautionary suspensions ruled by justice, a common occurrence in similar cases.

Most affected Indigenous populations - especially by the inflow of migrants looking for work, include the Karitiana, Karipuna, Oro Ari, Oro Bom, Cassupá, Salamãï and Uru-eu-Wau-Wau peoples. The EIA study does not consider indirect impacts on other less known or inaccessible communities such as the Katawixi, in the Jacareúba and Mucuin rivers, the isolated groups from Karipuninha, in the upper Candeias river, from Rio Formoso, from the Jacundá site and the Kaxarari, the latter with demarcated land. Also, authorization by Congress, as determined by the Brazilian Constitution and following to facilitate consultation to the interested peoples, is lacking. Failure to perform such consultations and obtain this authorization has already affected other similar projects in the Amazon region, as Belo Monte, on the Xingu river.

Social movements, such as the one representing populations affected by dams (MAB) and Indigenous organizations are likely to generate significant risks for the project, once impacts will start to be perceived and actualized. Absence of any plan of prevention or mitigation – due to the fact that the EIA studies denied the very existence of these problems – aggravates this situation and makes it difficult to calculate the potential economic damage to the companies in charge of the works.

Turbines' Technology and Impacts on Fish

In a recent attempt to reduce projected costs, some of the *consortia* being formed to participate in the auction showed interest in the possibility of using Kaplan turbines, rather than bulb ones, as defined in the project to which the LP was granted. Doubts arise around the legality of such change based on the conditions imposed by the LP, which aims at mitigating fish mortality, higher in the case of Kaplan turbines. Such uncertainty might generate speculations (also legal ones) after the auction, with impacts on the construction schedule and project costs.

Legal Risks about the Auction

Existing controversies around the auction might bring losers to legally question its outputs. The principal issue under discussion is related to the contracts for exclusive supply signed by Odebrecht with the main equipment suppliers, such as General Electric, Alstom, Voith-Siemens and VA Tech. Such contracts do not allow that other *consortia* request quotations for supply from the aforementioned companies, forcing to look for more expensive alternatives, in Brazil or elsewhere.

According to estimates by Camargo Correa, the clause of exclusiveness is likely to generate additional costs in the order of R\$ 10 (approx. US\$ 6) per Mwh. This also makes more difficult the financing on the part of BNDES bank, which requires that equipment is predominantly purchased domestically.

The relevant secretariat in the Ministry of Justice (SDE), at the request of Camargo Correa, declared such contracts void, which made Odebrecht to appeal to civil justice, alleging that loss of exclusiveness might result in leakage of confidential strategic information. The evolution of this dispute can be hardly forecast and will likely result in a full trial at the Competition Appeal Tribunal (CADE) as well as a parallel one in the civil justice, both able to question the legality of the auction at a later stage.

Cost Structure

Disagreement on total cost

Second calculations made by the Odebrecht-Furnas consortium, the total cost of Santo Antônio increased from R\$ 9,7 billions to R\$ 13,5 billions in two years. Proportionally, the estimated cost of electricity produced increased from US\$ 23 to US\$ 42 MWh. When the project was listed on PAC, in January 2007, the total cost was estimated by the government in R\$ 9,2 billions. The Energy Planning Enterprise (EPE), responsible for the government official estimates, keeps challenging the consortium forecasts.

A report from the Federal Tribunal of Auditors (TCU) suggests that reductions in the financing costs from BNDES, construction services and equipment could decrease the total cost to R\$ 8,6 billions. Despite the significant reduction of 13%, it does not oblige the regulator (ANEEL) to follow its recommendation. Nevertheless, the existence of a report from an official State entity, creates a precedent to other administrative and legal litigation in the future.

The risk of cost overruns in Santo Antônio in case of delays in Jirau should also be considered. There is no clarity whether Santo Antônio is economically viable alone, mainly because it would have to pay entirely for the transmission costs. As the two power plants and the transmission lines are being treated as independent projects, the

uncertainty might compromise the interest of investors in the latter. These impacts are analysed in more detail later.

Environmental Compensation

According to Brazilian law, a minimum fee of 0,5% of total project cost is collected in the form of Environmental Compensation. The amount is directed to the creation and maintenance of Conservation Units, a responsibility that used to be Ibama's and is now with Instituto Chico Mendes. There is a hard dispute about the percentage to be fixed for the Rio Madeira complex: the Ministry of Environment suggests 3%, the energy industry lobbies for the minimum of 0,5%. The preliminary license has not defined this fee, bringing uncertainty to the project's cash flow. If Instituto Chico Mendes decides for a percentage that discontents civil society, there is a high risk of litigation, increasing cash flow uncertainty. Usually, the percentage is proportional to project impact. Given that the flooded area is considered of high biodiversity⁴, civil society is expecting a high fee.

Exchange rate fluctuation on equipment prices

Close to 50% of Santo Antônio project costs refer to equipments. The exchange rate risk will depend on the winning consortium, but it is certain that some costs are linked to foreign currency, even if equipment is manufactured in Brazil.

⁴ According to the official atlas published by the Ministry of Environment

5. Client Risk

The Power Purchase Agreements will be signed after the auction, with a 30-year horizon. As yet it is unknown exactly what share will be sold in the regulated market and the residual that can be sold in the free market, normally at a higher price. Whatever the case may be, no obstacles to sale should arise, since there is demand for energy at the price currently envisaged for hydro sources. Neither is the credit risk of purchasers of much relevance, given that the majority of buyers should be energy utilities. The major risk, nevertheless, is that of the effective delivery of the energy contracted to the national network, since there is as yet no transmission line available.

Transmission Line

In order to effectively sell the energy to the primary consuming center of the country, the Southeast region, it will be necessary to build a Transmission Line of about 2,450 km, cutting the states of Rondônia, Mato Grosso and Goiás (or Mato Grosso do Sul) until connecting to the grid in the municipality of Araraquara (São Paulo state). The licencing of this line is legally necessary to bring the auction to fruition (as in the case of the power plants), but to carry out the auction without licensing, a possibility signalled by the federal government, represents a factor bearing considerable risk and uncertainty. Its principal problems:

- there is as yet no Environmental Impact Assessment/Report (EIA/RIMA) and not even a terms of reference from the national environmental agency Ibama to initiate environmental studies, as well as a lack of definition regarding its path, which would indicate the licensing process will be lengthy;
- the right-of-way of the line is greater than that of the area of direct influence of the reservoir (flooded area) which would suggest a complex licensing process, as well as the fact that its path would potentially pass through indigenous lands and other protected areas, which could require Congressional authorization;
- it is a large scale works project, preliminarily budgeted at around R\$ 10 billion, which must be put out for bids to the private sector with a model of remuneration which ensures its economic-financial viability, though such a model is as yet nonexistent.

These factors can delay the transmission line construction as well as the sale of energy, constituting a serious risk in the cash flow of the SPE.

6. Operating Risk

The risk of reduced productivity leading to non-attainment of the performance level and/or operational costs projected is of extreme importance to the economic-financial results of the project. The analysis of operating risk is concentrated in the capabilities and financial health of the operator, in technological and supply risks.

A conclusive analysis of the operator can only be carried out after the auction. With participation of parastatal corporations in the bidding, it is probable that one of these will become the operator, which will probably mitigate risk, given the experience of these corporations in this type of enterprise.

Technological and Sediment Risks

The Rio Madeira undertakings were projected with bulb type turbines, which will make it possible to exploit the river's strong flow and diminish the size of the reservoir created by the dams. Despite being a technology already tested in other projects around the world, bulb turbines were never used in a project of this scale, and neither have they been employed in a river that transports such a heavy sediment load. The risk of accumulation of sediments at the dam, with a consequent increase in the flooded area and diminished productivity, is one of the most controversial questions associated with the project. The federal government contracted the hydrologist Sultan Alam, who produced an opinion favorable to the technology, alleging that the sediments would pass naturally through the turbines. This external opinion was used by Ibama to grant the preliminary licence for the project. However, other renowned hydrologists, in Brazil and overseas, contest Alam's opinion, as well as questioning the fact that the specialist spent only three days in the region and studies only the Santo Antônio dam, extending his conclusions to Jirau. In the opinion of Jorge Molina Carpio and Carlos Tucci, the sediment studies should be deepened.

Supply Risks

The Rio Madeira dams will promote a significant alteration in land use patterns in the region, principally with the simultaneous construction of locks, which would permit navigation from Bolivia to the Amazon River, opening the way for an immense waterway that promises to be the principal form of grain transport. The logistical facilities should favor the expansion of the agricultural frontier, accelerating the deforestation of the Amazon biome, principally in the areas near to the tributaries of the Madeira river. This should generate an increase in both the volume of sediment and of sedimentation, as has been verified in a similar setting in other Amazon rivers, in particular in the case of the Tocantins River, with a possibility that generating capacity may thereby be reduced.

Besides this, alterations in the rainfall regime of the region due to deforestation have already begun to be felt; thus it is impossible to discard greater climate changes that can put supply based on Madeira River flow at risk, principally in the medium and long terms. Such alterations have not been adequately studied, suggesting a productivity risk for the power plants. Given the long concession and financing horizons of the project, as well as the high seasonality in the power plant generation perspective, this risk cannot be ignored.

7. Structuring Risk

The final structure of the deal is still not clear, given the uncertainties of the auction and the unknown winning consortium. Nevertheless, based on the scale of the project and the structures usually employed to bring about similar investments, it is possible to predict some characteristics and associated risks. The principal risks to be analysed are in consequence of the insufficient guarantees for cumulative delays or losses and that of unlinked interest rates.

Insurance

Contracting of an insurance package is fundamental for the achievement of this type of project, including the more common sort, such as engineering risk insurance and insurance for civil responsibility against third-party damages, up through the more complex and expensive type, such as performance and completion bonds.

Specifically, insurance guarantees should constitute a key aspect for the obtaining of the project's financial structuring. Such insurance generally guarantees the finalization of works in the case of insufficiency of resources on the part of the builders or payment of the total works budget to the insured party. Given the elevated cost of the project, it will be necessary to assure participation of a large scale insurer or of a pool of insurance agencies that will pass along part of the risk to international reinsurance agencies.

Considering the high project risks, furthermore, such a policy could represent a significant cost to the SPE, which will also have difficulty in finding partners in the insurance sector disposed to cover such a risk. Additionally, in the case of an accident, there is the possibility of litigation and the consequent delay in payment of the insurance or even of financial difficulties on the part of the insurers and reinsurers contracted.

Subordination of the Debt

BNDES has already announced that it could finance up to 75% of the project at subsidized rates, which will position it as the probable largest financier of the Rio Madeira Complex. In deal of this nature, BNDES demands a series of guarantees, such as distraint of credit rights obtained from ANEEL authorizations or of shares in the SPE, fiduciary alienation of lands and improvements, escrow accounts, liquidity cushions and, inclusively, treatment of the debt as preferential (senior). Whatever other financiers may exist, therefore, would be forced to enter into the deal with a subordinated debt, which would elevate the risks they face.

Furthermore, BNDES recently signalled that its high risk perception regarding the deal could require corporate guarantees, that is, the SPE shareholders would be obliged to

provide real and/or fiduciary guarantees with other assets unrelated to the investment in the Rio Madeira Complex.

ANEXX: Reputational Risk

The strengthening of civil society organizations since the 1980s has led to increasing scrutiny over banks and other development institutions regarding the social and environmental impacts of the projects they support. The main targets were the World Bank, the European Bank for Reconstruction and Development, the Interamerican Development Bank, and other regional banks.

In the following decade, private banks grew their stakes in development finance, becoming also targets of international campaigns and scrutiny. The notorious campaign of Rainforest Action Network, a San Francisco based environmental group, challenged the investments of Citigroup in activities that were harmful to tropical forests. In 2003, the American bank adopted more restricted financing policies, and helped create the Equator Principles, a set of environmental and social safeguards applying to project finance and subscribed by over 50 banks globally. Recently, a civil society campaign contributed to the take over of TXU by private equity funds. The large energy company from Texas was planning the construction of a dozen highly polluting coal-fired power plants. The new shareholders decided to change the company's growth strategy to cleaner sources.

The Rio Madeira Dam Complex is monitored by many civil society organizations, especially after its integration into IIRSA⁵ – Initiative for the Integration of Regional Infrastructure in South America, which has the Interamerican Development Bank as its principal promoter. The campaign to warn against the project's social and environmental impacts is intensifying, with some actions already taking place within the financial sector.

Local Campaign and Bolívia

Many organizations in the state of Rondônia and in Bolívia have initiated a structured process of meetings and seminars in order to discuss and plan joint initiatives. The campaign website⁶ has functionalities such as cyber-actions and serves as a depository of independent studies that point out problems in the Rio Madeira project. The following are some of the organizations identified in the campaign:

- FOREN - Fórum de debates sobre energia de Rondônia.
- GPERS - Grupo de Pesquisa em Energia Renovável e Sustentável da Unir
- KANINDÉ - Associação de Defesa Etno-Ambiental.
- MAB - Movimento dos Atingidos por Barragens
- CIMI - Conselho Indigenista Missionário
- CPT - Comissão Pastoral da Terra

⁵ www.iirsa.org

⁶ www.riomadeiravivo.org

- OSR - Organização dos Seringueiros de Rondônia
- RIOTERRA- Centro de Pesquisas Subaquáticas da Amazônia
- REBRIP – Rede Brasileira para Interligação dos Povos
- Rede de Educação Cidadã
- FOBOMADE – Foro Boliviano de Medio Ambiente y Desarrollo
- Herencia
- LIDEMA – Liga em Defesa del Medio Ambiente

National Campaign

Civil society organizations that focus on implementing rights and monitoring public policies are involved in the Rio Madeira issue. These groups produce independent studies, and provide information to the Public Prosecution Office, local communities and media. Some have even started interaction with the financial sector.

- Núcleo Amigos da Terra /Brasil
- Ecoa – Ecologia e Ação
- Instituto Madeira Vivo - IMV
- Grupo de Trabalho Amazônico - GTA
- International Rivers Network - IRN
- Instituto Socioambiental - ISA
- Coordenação das Organizações Indígenas da Amazônia Brasileira - COIAB
- Instituto Centro Vida - ICV
- Instituto de Estudos Socioeconômicos - INESC
- Centro de Apoio Sócio Ambiental - CASA
- AMAZON
- WWF Brasil
- Greenpeace Brasil
- Rede Brasil sobre Instituições Financeiras Multilaterais

International Campaign

Environmental activism is notoriously more organized in developed countries than in emerging markets. However, there is a large number of international civil society organizations with programs targeting developing countries. The Amazon, specifically, is a region of high interest, together with the project nature – large dams – put the Rio Madeira Complex in the list for an international campaign. The current priority to combat climate change shall give the project a lot of attention because of its contribution to deforestation.

Bank Track⁷, a network of civil society organizations tracking the activities of the private financial sector and its impact on environment and communities, has a specific webpage⁸ portraying the Rio Madeira case. With a strong presence in Europe, the network has already placed pressure on banks interested in financing or advising the project.

The Washington based Bank Information Center (BIC⁹) tracks the activities of international financial institutions. The group also has a specific page on Rio Madeira within its broader program to monitor IIRSA, called Biceca¹⁰. BIC has strong collaborative capacity both in North and South America.

Furthermore, renowned organizations such as Amazon Watch, BothENDS, CEE Bankwatch, Setem, Rainforest Action Network and AIDEnvironment, amongst others, have displayed their interest to support this campaign.

Voluntary Commitments

Since Rio-92 there has been more engagement between the public and private sector on social and environmental issues. On a sector level, many voluntary commitments or protocols were crafted and ratified by key industry players, including financial players. Those commitments are often used as marketing and corporate communication tools, in an attempt to cease criticism from civil society organizations. These monitor the implementation of commitments and protocols, aiming at informing the public about gaps between speech and practice. The signatories to such commitments may cause significant harm to their reputation if they decide to support the Rio Madeira project. Albeit civil society does not consider the protocols as effective practices, they are a good baseline for financial institutions seeking to pursue a sustainability journey. Conversely, non-signatory financial institutions can also be called to comply with international best practice.

Green Protocol

The Green Protocol, a set of social and environmental commitments, was created in 1995 and signed on by the Brazilian public banks: BNDES, Banco do Brasil, Caixa Econômica Federal, Banco do Nordeste, and Banco da Amazônia. According to the protocol, the banks were obligated to develop policies that restrict credit to companies or projects with high social or environmental impact. In particular, the fourth clause states that “environmental risks should be considered in the credit analysis and deal conditions”, which has had a timid implementation so far.

Equator Principles

⁷ www.banktrack.org

⁸ <http://www.banktrack.org/??show=dodgy&id=38>

⁹ www.bicusa.org

¹⁰ <http://www.biceca.org/es/Project.Overview.138.aspx>

Created in 2003 and reviewed in 2006, the Equator Principles are the commitment of private banks to utilize the IFC's eight Social-Environmental Performance Standards for project finance and advisory. The 52 signatories¹¹, amongst them the Brazilians Banco do Brasil, Bradesco, Itaú and Unibanco, account for over 90% of world's project finance volume.

The principles were created with a focus on developing countries, where banks acknowledge a fragile institutional and legal framework to protect dispersed social and environmental interests. Hence, it is not enough for signatories to check compliance with local law, but to assess the project in its entirety, based on international best-case practices. It is noticeable that the Rio Madeira Complex has significant challenges to comply at least with the following performance standards:

4. Community Health and Safety
5. Land Acquisition and Involuntary Resettlement
6. Preservation of Biodiversity and Sustainable Management of Natural Resources
7. Indigenous Peoples

Principles for Responsible Investment

The United Nations Principles for Responsible Investment¹² (UNPRI) were created in 2006 and ratified by large institutional investors. In Brazil, major pension funds are signatories, including Petros and Funcef, which have demonstrated interest on an equity stake in the Rio Madeira SPE. They are sponsored, respectively, by the state-owned companies Petrobras and Caixa Econômica Federal.

The principle number 1 suggests that environmental, social and governance indicators should be embedded into investment analysis.

¹¹ **Latin America:** Banco do Brasil, Bradesco, Corpbanca, Itaú, Unibanco

North America: Bank of America, BMO, CIBC, CIFI, Citi, E+CO, JPMorgan, Manulife, Royal Bank of Canada, Scotiabank, Toronto Dominion, TD Bank, Wachovia, Wells Fargo

Europe: ABN AMRO, Banco Galicia, Banca Intesa, Barclays, BBVA, BES, Calyon, Caja Navarra, Credit Suisse, Dexia, Dresdner, EKF, FMO, Fortis, HBOS, HSBC, HVB, ING, Intesa Sanpaolo, KBC, La Caixa, MCC, Millennium, Nordea, Rabobank, Sanpaolo IMI, Standard Chartered, RBS, SEB, WestLB

Asia Pacific: ANZ, BTMU, Mizuho, SMBC, WestPac

Africa: Nedbank

¹² www.unpri.org



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