Private Gain – Public Risk?

The International Experience with Power Purchase Agreements of Private Power Projects

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1. Introduction

"The Power Purchase Agreement is our payment for a huge amount of electricity that we actually do not use", the *Inquirer News Service*, a Filipino newspaper, commented on May 15, 2002. "In other words, the PPA is like a huge vacuum cleaner. It sucks."

The cost to society of Power Purchase Agreements (PPAs) has become a major political issue in the Philippines in recent years. PPAs have also stirred debate, conflict and even political turmoil in countries such as Indonesia, Thailand, China, India, Pakistan, Bangladesh, Colombia, Belize, Tanzania, and Uganda.

Power Purchase Agreements define the rights and duties of investors and the state in private power projects, and distribute the projects' risks and benefits. PPAs are highly complex, technical documents which entail major, long-term financial obligations for governments and thus the societies of the countries concerned. They cast into binding contracts much of what has gone wrong in the power sector of many countries during the 1990s. Numerous examples have surfaced of PPAs which provide sweetheart deals for private investors, guaranteeing them high profits at low risk, while entailing major costs for the public.

In spite of their far-reaching implications, Power Purchase Agreements are usually confidential documents. This secrecy is increasingly being challenged. Non-governmental organizations, parliaments, the media and academics are asserting through legal and other means society's right to be informed and consulted about private power projects, and to participate in their governments' decisions about PPAs. In Belize and recently in Uganda, courts have ordered PPAs to be made public.

This paper gives an overview of what PPAs are, why they have been deemed necessary, and what problems they have caused. Given International Rivers Network's mission, it focuses largely, although not exclusively, on hydropower projects. The paper is meant to assist citizens and civil society groups in scrutinizing Power Purchase Agreements in their countries, and to help put their own experiences with PPAs into a wider perspective.

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2. Background: Privatization in the Power Sector

Power has long been considered an important public service, a strategic resource in a country's development, and a natural monopoly. Throughout the world, the power sector has been controlled, and usually owned, by the state. This assumption was challenged by the advent of the aggressively free-market governments of General Pinochet in Chile, and later Margaret Thatcher in the United Kingdom. Chile and the UK started opening up their power sectors to competition in the late 1980s.

Several factors have brought about the privatization of state enterprises and public utilities since the early 1980s. As a consequence of the debt crisis, many Southern governments did not have the financial resources to continue investing in public utilities, many of which were operated inefficiently and had run up large deficits. The World Bank and the International Monetary Fund enforced the liberalization of trade and investment regimes as part of their structural adjustment programs. These liberalizations triggered a massive increase in foreign direct investment in Southern countries in the early 1990s. Opening up state-controlled sectors to private investors and privatizing public utilities soon became policy conditions of World Bank and IMF lending. The revolution in information technology facilitated the processes of privatization further. Progress in computer technology allowed the decentralized management of power systems, and thus seemed to obliterate the need for a central authority to control them.

Different forms of privatization

The commercialization and privatization of the power sector has taken many different forms:

?? Public utilities are unbundled into separate generation, transmission and distribution companies and corporatized, meaning that they remain state owned but are turned into independent, profit-seeking entities.

?? Contracts for the management and operation of state-owned power utilities are awarded to private companies.

?? Private companies and public-private joint ventures are allowed to invest in new power plants. Such greenfield projects can take the form of build-own-operate (BOO) or build-operate-transfer (BOT) projects. In the latter case, private plants are transferred to state ownership after a certain period of operation, usually 20-30 years.

?? Public power generation, transmission or distribution utilities or individual power plants are privatized.

?? Electricity markets are liberalized in that customers – often only large electricity consumers – are allowed to freely negotiate supply contracts with power producers of their choice.

Capital flows for private power projects

In the 1980s, capital flows for private power projects in developing countries amounted to a mere trickle. They picked up in the early 1990s. By mid-1998, 73 developing countries had taken at least one step towards privatizing their power sectors. One year later, more than 600 power projects (greenfield plants, privatizations, management contracts) had attracted $160 billion in foreign direct investment. Power generating plants accounted for more than two-thirds of all projects, with integrated utilities, distribution and a few transmission projects accounting for the rest. Roughly two-thirds of all investment focused on East Asia and the Pacific, and Latin America and the Caribbean. South Asia, Europe and Central Asia accounted for most of the rest, and a very small amount of investment went to the Middle East and Africa. After the Asian financial crisis, foreign direct investment fell dramatically, with new foreign investment in the energy sector dropping from $46 billion in 1997 to $15 billion in 1999. Negative experiences and the opposition of civil society also helped to halt the development of private power projects in many countries.

During the 1990-97 period, 56% of private investment in the power sector funded greenfield projects, while 40% funded privatizations. Latin America, the Caribbean, Europe and central Asia favored the divestiture of state enterprises. In the rest of Asia, with a rapidly growing demand for power, investment in the sector largely focused on greenfield projects.

During 1991-97, contracts for 137 greenfield private power projects with a capacity of 100 MW or more and worth $65 billion were concluded. About half of these projects consisted of build-own-operate, and about half of build-operate-transfer schemes. Asia accounted for 103 contracts worth $54 billion, and Latin America for 28 projects worth $6.6 billion. In the 1990-99 period, AES, an Independent Power Producer (IPP) based in the US, was the most important sponsor of independent power projects around the world, with 35 projects and a total investment of $12.7 billion. AES, Enron and Electricité de France together accounted for more than half of the 156 projects and the total investment of $68.2 billion during this period.

The false dawn of private hydro

Compared with gas and coal-fired power plants, large dams entail so many risks that private sponsors are reluctant to invest in them. “There are those who maintain that hydropower projects will only be built in the future with explicit public support,” Anthony Churchill of the Washington Energy Group said in 1997. “Some even go as far as to say the private sector will not build hydropower projects. Under the present way of doing business, they are right.” According to the magazine *Power in Asia*, only 11% of the greenfield power projects under development in 1997 were dams, and very few of them had reached financial closure. Privately sponsored hydropower projects typically have a capacity of 50-200 MW, and a small reservoir. Larger projects are considered too risky, and smaller projects cannot recover the upfront investments in feasibility studies, environmental assessments etc.

The funds for the 137 private power projects contracted in 1991-97 came from private lenders and investors (78%), export credit agencies (11%), bilateral institutions (7%), and multilateral development banks (5%). Most independent power projects are funded on a so-called project finance basis. This means that their debt is serviced and repaid from the revenues of the project entity, and that creditors cannot take recourse to the assets of the parent company if these revenues do not materialize, or only to a limited degree. In the case of the Bujagali hydropower project in Uganda, for example, AES Corporation set up a Ugandan subsidiary, AES Nile Power Ltd. If the revenues from Bujagali are not sufficient to service AES Nile Power 's debts, their lenders are unable to make claims upon AES Corporation in the US.

Financial institutions will usually require some guarantees from the host government or the parent company when they fund private power projects. Alternatively, they will request that revenues received by the utility from power consumers are paid into “escrow” accounts to which the private developer has direct access. If the utility defaults on its payments to the power generator, important consumers will then pay their power bills directly to the generator instead of the utility. Depending on what guarantees are provided, project finance is also called “non-recourse” or “limited recourse” financing.

Usually, independent power producers supply electricity to public utilities as their single customers through long-term power purchase agreements. In Latin America, many IPPs also sell to diversified private customers on a short-term basis. Power plants which sell electricity to various customers without long-term sales contracts are called “merchant plants”. Of the 70 greenfield projects in Latin America, 29 are merchant plants. As their original Power Purchase Agreements are gradually expiring, many older independent power plants in the US are now being turned into merchant plants.

3. How Power Purchase Agreements work

Unless power distribution has been privatized and taken over by several companies, or unless customers are able to buy power from producers directly, independent power producers rely on a single customer for the electricity they generate. In such cases, an

investor or sponsor will want to have a long-term contract for the sale of electricity before going ahead with a project. Sales contracts are established in Power Purchase Agreements (PPAs) between investors and governments or utilities. Usually, PPAs define the obligations of the parties for a period of 20-30 years. Other aspects of a project are agreed upon in further contracts, such as Project or Concession Agreements, Implementation Agreements, Operations and Maintenance Agreements, and Support Agreements.

Power – and particularly hydropower – projects entail massive financial risks. Power Purchase Agreements allocate these risks between the relevant parties, and define the terms of the power purchase. In the case of dams, water flows may be less than predicted, meaning that the projects will not be able to generate their expected amount of power. The opposition of affected people and NGOs, geological problems, natural disasters and bureaucratic red tape can delay projects indefinitely. Construction costs can escalate massively. Economic growth and the demand for electricity may not meet expectations. An investor can run out of resources, and lending for the project may fail to materialize. Governments can change, and so can laws and regulations governing the power sector and foreign investment generally. Power plants may not operate up to international standards, and dams can break. In the case of thermal power plants, fuel may not be supplied in time or in sufficient quantities, and its price may fluctuate widely.

Affected communities, particularly in the case of large dams, face massive risks as power projects are being developed. The projects can also severely impact the environment. Affected communities are however not parties to PPAs, and contracts typically do not consider the risks they must bear. Social and environmental mitigation measures are usually detached from the mechanisms for the construction and operation of a project, and so projects will go forward even if mitigation measures are not implemented or do not work.

In theory, a PPA is supposed to allocate risks to the parties which can best control or mitigate them. The financial benefits should be commensurate with the distribution of risks between the sponsor and the state. In practice, both parties will try to minimize their risks and maximize their benefits. Corruption, experience with negotiating similar deals, resources to hire legal advisors and other factors relating to the bargaining power of the different parties may also impact their negotiating positions.

In the case of a private project, host governments are typically interested in the affordable and reliable supply of power, in maximum security that dams do not break, and in the limitation of damage by the project to the environment. Investors are interested in the speedy authorization of a project, the protection of their investment, in securities that project revenues can be converted into hard currency and transferred abroad, and the access to independent or sympathetic arbitration in the case of conflicts.

In a typical PPA, the sponsor will have to assume the risks of implementing a project in time and within budget, and of operating the project safely and reliably. Under the Implementation Agreement, sponsors are obliged to issue so-called Financing Bonds,

which the governments or utilities can cash in if the sponsors unduly delay or abandon a project. Often, an investor will pass on the risks of cost and time overruns through a Construction Contract to a turnkey contractor, which is responsible for building the project at a fixed price and in a predetermined period of time (but not for operating it). Governments must provide guarantees that the private investment will be protected, that the required concessions and permits will be awarded in time, that project revenues can be converted into hard currency and transferred abroad, and that changes in regulations or laws will not negatively affect the project sponsor.

Many risks in power projects are beyond the control of either the government or the investor. Natural catastrophes, wars or general strikes can interrupt the construction or operation of a power plant. Demand for electricity may not grow as projected, so that there is no or weak demand for a plant's output once it is built. In the case of hydropower projects, future water flows may not be sufficient to generate predicted amounts of power. Such risks are normally treated in the so-called *force majeure* clauses of a PPA (see below).

Private investors are often not prepared to accept these substantial risks and so projects will only go ahead if governments are prepared to assume them. So-called take-or-pay clauses require the "off-taker" (the utility buying the power) to pay for a pre-determined amount of electricity from a hydropower project even if the plant is unable to generate this amount because water flows are inadequate, and even if there is insufficient demand for the power from consumers. It is often the lenders to a project which insist on take-or-pay clauses, so that their debt can be promptly serviced. In some cases, private sponsors have commissioned stream flow studies themselves, and have taken on the hydrological risks of the respective projects.

Power Purchase Agreements also define the prices a utility has to pay for the power produced by the project, or rather for the project's capacity to generate power. The prices are supposed to reflect the distribution of risks between the government and the sponsor. They need to cover the debt service for project construction, the operation and maintenance costs, taxes, and the return on the investor's equity.

PPAs will always include clauses on the resolution of disputes which arise over the construction or operation of a project. Investors usually request that disputes are resolved by international arbitration mechanisms, such as the tribunal of the International Chamber of Commerce (ICC), the rules of the United Nations Commission on Trade Law (UNCITRAL), or the World Bank's International Centre for the Settlement of Investment Disputes (ICSID). As a matter of law or practice, some countries, including Brazil, China, and Turkey, require disputes to be resolved by the national judiciary, and do not accept international arbitration.

4. PPAs and Good Governance

Lack of transparency

Transparency and government accountability are fundamental concerns of civil society groups. Under the catchword of "good governance", most financial institutions and governments have accepted that transparency and accountability are essential preconditions for economic development. The confidentiality which marks Power Purchase Agreements runs counter to these generally accepted tenets. All PPAs of which International Rivers Network is aware contain confidentiality clauses which prohibit their release.

In the case of the Bujagali project, Uganda's National Association of Professional Environmentalists has for many years called for the public release of the PPA. The World Bank Inspection Panel, in its report on the project, argued that "full disclosure of the PPA is vital if the intent is to place the public in a position to analyze, understand, and participate in informed discussion about viability of the Project and its impact on the economy and well-being of Ugandans".

The World Bank, the Ugandan government and AES Corporation rebutted demands for the public release of the PPA with the argument that the contract affected legitimate commercial interests which would be violated by its publication. However this PPA is not a contract between two private parties, but commits a government, and thus a country's society, to large financial payments over a period of 30 years.

The massive corporate scandals of the past two years are sensitizing international society to the importance of accountability in the business world. This may also have an impact on the secretiveness of Power Purchase Agreements. In 2002, the Supreme Court of Belize ordered the public release of the PPA for the Chalillo hydropower project on the Macal River. On November 12, 2002, the Uganda High Court in a landmark decision also ruled that the PPA of the Bujagali hydropower project be released to the public.

Lack of competitive bidding

The secrecy of PPAs is often compounded by the lack of competitive bidding for private power, and particularly hydropower, projects. Negotiations without competition, and the lack of transparency regarding the outcome of such negotiations, open the doors for privileged deals and corruption.

In principle, the need for international competitive bidding in infrastructure projects is generally accepted. The World Bank, in a *Public Policy for the Private Sector Note* of December 1998, acknowledged that "bidding seems to have reduced PPA prices by 25 percent on average", and recommended "discouraging the widespread practice of non-competitive procurement of goods". "[P]rovided that sufficient interest can be attracted from bidders, governments, and utilities can obtain better terms for the host country under competitive bidding for proposals from IPPs than under noncompetitive negotiated deals", add World Bank power economists Robert Bacon and John Besant-Jones.

Walid Musallam, a consultant and former IFC official, points out that competitive bidding also reduces the risk of political resistance against projects. “The transparency of the process by which a project concession is awarded also is a strong determinant of the level of political risk faced by the sponsors. In general, competitively bid concessions face low levels of political risk and command better financing terms in the marketplace”, Musallam noted in March 1998. And in a contributing paper for the World Commission on Dams, Michael Wiehen, chair of Transparency International, Germany (and a former country director of the World Bank), stated:

> “Among the standard rules on procurement which should be covered by the national jurisprudence are the following: open, public competition must be the rule and actual practice for all procurement decisions above a relatively low value threshold; any exceptions should be possible only in truly exceptional circumstances (e.g., natural disasters).”

There is also general agreement on the importance of international competitive bidding for public works projects in Uganda. “The most perverse corruption is in the procurement of goods and services”, the Uganda Debt Network commented in May 2001. “A high proportion of grand corruption cases result from procurement”, the Ministry of Finance, Planning and Economic Development confirmed in its latest Poverty Reduction Strategy Paper Progress Report. As a consequence, the Ministry announced that “open tendering will be required, except for projects under a specific limit or in the specified circumstances”.

In spite of such announcements, Power Purchase Agreements are regularly based on exclusive bilateral negotiations rather than competitive bidding. In Indonesia, 26 out of 27 independent power projects were not based on competitive bidding. “In the good old days, there was little of that nonsense about competitive bidding”, the *Asian Wall Street Journal* commented on July 28, 1999. “You simply hooked up with a Suharto relative or friend and, in a typical arrangement, offered to ‘lend’ them 15 percent equity, repayable only when the electricity started to flow.”

In their Project Appraisal Document for the Bujagali dam, the World Bank and IFC claim that because “developers normally want an exclusive right to a site before they commit substantial resources in project development”, hydropower projects are “generally unsuitable for a competitive process based on the price of electricity”. One of the main arguments for promoting private sector power projects has been that competition reduces prices. If competition is indeed not possible in the bidding for private hydropower projects, this is an important argument against promoting private hydropower.

Lack of rational planning

Independent power projects are often not based on any rational planning regarding the development of a country’s power sector. Many governments, including those of

Indonesia, India (1991-95) and the Philippines (from 1994 onwards), have accepted unsolicited proposals from developers. This means that power ministries, especially in countries with little public accountability, have responded more to high-profile proposals from large companies than to a balanced and comprehensive assessment of their countries' energy needs and options. As Navroz Dubash, a senior associate at the World Resources Institute, observes, unsolicited proposals strengthen the bias against using demand-side management measures in the power sector.

Between 1991-94, Indian state power utilities signed 243 Memoranda of Understanding (MoUs) for the development of independent power projects with a total capacity of 90,000 MW. The government of the state of Andhra Pradesh signed 64 such Memoranda in a single day. Most of the respective projects never went ahead. By 2001, private power projects in India had a total capacity of only 3,200 MW. These unsolicited proposals absorbed the capacity of planners in the power sector, and hindered the development of more rational options for meeting India's demand for power.

Cronyism and corruption

According to a survey prepared by Transparency International, the public works and power sectors are internationally perceived to be the most corrupt and third-most corrupt industrial sectors, respectively. A World Bank *Public Policy for the Private Sector Note* confirms that “the energy sector, with its complex mix of public and private actors and often enshrined centers of monopoly power, is prone to corruption”.

Corruption is clearly fostered by the lack of transparency and accountability which besets private power projects, and their PPAs in particular. Many examples suggest a clear link between the lack of due process, corruption, and the development of unwarranted, often uneconomic private power projects:

?? In August 1998, the World Bank prepared an internal paper on the mechanisms of corruption in public works projects in Indonesia. The paper documented in detail how typically, 20-30% of the country’s development budget was siphoned off. Power projects in particular were usually developed with the support of children or cronies of General Suharto. “Everybody knew it was nepotism, but we couldn’t do anything about it”, a former head of research at Indonesia’s power utility commented. Djiteng Marsudi, the utility’s president between 1995 and 1998, said in more general terms: “The power companies dictated terms to us because they had Indonesia’s first family behind them. Resisting them was like suicide.”

?? Corruption is also widespread in India’s power sector. In the case of Enron’s huge Dabhol thermal power plant in Maharashtra, a company executive admitted that Enron spent “approximately $20 million” on the “education and project development process alone, not including any project costs”. (According to the project’s budget, this item amounted to $27 million.) In September 1995, Maharashtra’s government said in court that the Dabhol PPA had been procured “by fraud and

misrepresentation". Like most Indonesian power plants, the private Dabhol plant was developed without competitive bidding, and produced power at exorbitant cost.

?? An official investigation into 35 private power projects in the Philippines documented that many were developed through cronyism. The Binga hydropower project for example, which has one of the country's most onerous PPAs, was developed by a godson of the father of then President Fidel Ramos, and a generous funder of Ramos' party. The controversial Casecnan dam project was developed by an old personal friend of the President. The Philippine Center for Investigative Journalism showed in a separate investigation that "Ramos personally pushed for the speedy approval of the most expensive power deals and justified signing more contracts despite warnings from within the government and the World Bank that an impending oversupply of electricity could push up prices". (See below for why an oversupply can increase power prices.)

?? After 1992, a businessman developed a power plant with a favorable PPA in Baranquilla, Colombia, by teaming up with the US-based Sithe energy company, and by paying off the brother of a centrally placed senator. The *Texas Observer* commented in April 2002 that the businessman's talents "have more to do with political power generation than with electrical". Colombia's government later repudiated the unfavorable contract (see below).

?? In July 2002, Richard Kaijuka, ex-power minister of Uganda and then an Alternate Executive Director of the World Bank, admitted to having received a payment of $10,000 from the lead construction company in the Bujagali consortium. The project is presently being investigated for corruption by the World Bank and the relevant authorities in Norway, Uganda, the United Kingdom, and the United States.

5. Risks beyond control

Some important risks inherent to power projects are beyond the control of the government, the power utility, and the private investors. Generally summarized as *force majeure*, these risks include a deterioration of the exchange rate, insufficient demand for power and, in the case of dams, insufficient water flows to generate projected amounts of power. Private investors will normally refuse to assume such risks, and the off-takers, normally government utilities, will be forced to carry them under the terms of a PPA.

Hydrological risk

The level of power production from a hydropower plant depends essentially on how much water is available to its turbines. Stream flow patterns vary greatly over time and depend on factors which are difficult to predict such as rainfall and temperature patterns and watershed land use changes. It is generally considered necessary to have several

decades of good quality historic stream flow data to make a reliable projection of future stream flow probabilities. Such data is often not available. Even if it is, there is no guarantee that future stream flows will match historical experience. Indeed global climate change has now made it almost certain that future stream flows will not match historical experience.

Under most Power Purchase Agreements, the off-taker has to assume the hydrological risk of a hydropower plant, i.e. the risk that stream flows will be too low to generate the projected amount of power. Hydropower PPAs typically set a minimum amount of electricity for which the off-taker will guarantee to pay. If a drought means that the plant cannot generate this amount, the off-taker will still have to pay for this non-existent power. In this sense, a government does not contract to buy electricity under a PPA, but to pay for the provision of power plant capacity – with the risk that part of the capacity will be useless.

Historically there has been a clear trend of hydrologists' projections of hydropower production being overoptimistic. Hydrologists are aware that their clients and hydropower contractors prefer larger projects. They mean bigger contracts for project-related goods and services, and more opportunities for patronage and corruption. Of the 63 hydropower dams covered by the World Commission on Dams' cross-check survey, 35 produced less power than had been planned.

In the case of some reservoirs, actual water discharge has been far lower than expectations. The Akosombo dam in Ghana, which impounds the world's biggest reservoir by area, has only generated at around half of its projected output. The Sardar Sarovar dam in India's Narmada Valley is being built based on stream flow projections which overstate empirical evidence by at least one fifth. Both dams were designed by reputed consulting firms, and funded by the World Bank

Climate change adds to the uncertainty of hydrological predictions. As early as 1991, the Intergovernmental Panel on Climate Change warned that global warming will have implications for the performance of dams. This conclusion was confirmed by the World Commission on Dams. In June 2001, two engineers of Edinburgh University pointed out that:

> "Global warming and changes in precipitation patterns will alter the timing and magnitude of river flows. This will affect the ability of hydropower stations to harness the resource and may reduce production, implying lower revenues and poorer returns. (…) The techniques of hydropower appraisal are long established. However, the continuing reliance on historic flows to indicate future flow conditions is not prudent given the prospect of climate change."

In practice, hydrological projections do not yet incorporate the prospects of climate change. It is the governments which carry the risks of such imprudence under most Power Purchase Agreements.

The risk of insufficient demand

Just as hydrological projections often turn out to be over-optimistic, so do projections for the growth of power demand. In more than 100 national electricity demand forecasts used by the World Bank, actual demand seven years after the forecasts were made was on average one-fifth lower than projected.

New power plants are usually built to serve growing demand. Electricity cannot be stored, and if demand growth does not catch up with expectations, the electricity generated by a new plant cannot be absorbed. Under most Power Purchase Agreements, it is again the governments which have to cover this risk. So-called take-or-pay clauses stipulate that governments have to pay for a pre-determined quantity of electricity, even if demand for this amount does not exist. Since they have to pay for private power irrespective of whether it is consumed, governments in a situation of oversupply may have to shut down the power plants of public utilities even if they produce at lower cost than their private competitors.

Take-or-pay clauses have a perverse effect in periods of oversupply. The more demand shrinks, the more the prices rise. Laszlo Lovei, a World Bank power expert, explains this negative impact of the so-called single-buyer model (in which a private producer has an exclusive PPA with a utility) as follows:

> "[T]he single-buyer model responds poorly when electricity demand falls short of projections (such as in a macroeconomic crisis). Ideally, electricity prices would fall, stimulating demand, and revenue losses would be allocated to private financiers, best equipped to manage market risks. Under the single-buyer model, however, wholesale electricity prices rise because take-or-pay quotas (…) must be spread over a shrinking volume of electricity purchases. When these high prices cannot be passed on to final consumers, taxpayers must bear the losses."

Private power producers have created an expensive power glut in many countries:

?? In the Philippines, Jose Isidro Camacho, Finance Secretary and chair of the government's IPP Interagency Review Committee, announced in May 2002 that the overproduction of electricity in the country had reached 40%. The chair of the Senate's energy committee asked that 11 plants of the public power utility be closed so the electricity generated by the private power projects could be absorbed.

?? Indonesia's national power utility in 1998 had a capacity of 14,000 MW. After the Asian financial crisis, this was sufficient to fulfill the country's demand. Yet since 1994, the Suharto government had concluded Power Purchase Agreements for private power projects which would add another 11,000 MW to the system. The US embassy in Jakarta estimated that by 2000, the power utility would have to spend half of its budget for power from private producers – power which the country did not need. In 1997, the government decided that only ten of the 27 private projects should go

ahead. Still, during the economic crisis it had to shut down cheap public power plants in order to absorb the much more expensive private power.

?? In the case of Enron's Dabhol power plant in Maharashtra, an official investigation committee found that the power demand projections were "based on extremely over-optimistic assumptions". India's Central Electricity Authority warned that Maharashtra's power utility would need to shut down plants producing power at 0.50-0.80 Rupees/kWh in order to buy power from Dabhol at 3.47 Rupees/kWh. As it turned out, Dabhol power eventually cost 7.80 Rupees/kWh, and immediately caused an expensive oversupply in the state, which threatened to run the power utility and the state government into bankruptcy (see below).

?? In 1999, World Bank officials said the 3,300 MW Ertan hydropower project in Sichuan/China would alleviate "acute power shortages in a least-cost manner". The Bank approved $1.8 billion for what is currently China's largest hydropower dam. After 1995, power demand growth in Sichuan province plummeted and various medium-sized thermal power plants came on-line. Ertan started producing power which was not needed at prices which were not competitive. As a consequence, Sichuan province and Chongqing municipality are buying only about half the power and at a lower rate than they had contracted in a PPA with the Ertan Hydropower Development Corporation. "We have our own power stations to satisfy our needs and they are cheaper than Ertan. Why should we take that power?", the *Financial Times* quoted a Chongqing city official as saying.

?? In 1998, a study by Electricité de France projected power demand in Uganda to grow by an average of 5.5% per year over the 2000-2020 period. The Power Purchase Agreement for the Bujagali project is based on another study, which projects power demand in the country to grow by an average of 8.3% per year. The World Bank refused to make this study available for public scrutiny. In its report on the Bujagali project, the World Bank Inspection Panel criticized that several assumptions used in the demand forecast were "not properly justified" or "should have been more thoroughly explored". The Bujagali PPA contains a take-or-pay clause, and so it is again the government which assumes the risk that the projections of the demand forecast may not be met.

?? Since 1992, Thailand's electricity utility EGAT has consistently overestimated future demand. By 2001, the utility's excess capacity, which sat permanently idle, reached more than 50% of peak consumption. At the same time, EGAT had signed contracts for 42 IPPs with a total capacity of more than 10,000 MW and a cost of more than $55 billion over the lifetime of their contracts.

Exchange rate risks

Even if they follow the orthodox neoliberal economic policies prescribed by the World Bank and the International Monetary Fund, developing country governments cannot

control the exchange rate of their currencies. The prices for their most important export commodities can suddenly drop, and their terms of trade will deteriorate. A neighboring country can be hit by an economic crisis, which can cause foreign capital to be withdrawn indiscriminately from the whole region. As a consequence of such events, the exchange rate will deteriorate.

A large part of the cost of hydropower projects – in particular the costs of imported equipment and international consultants and construction companies – accrues in foreign currency. Foreign investors expect to expatriate their profits in foreign currency. Yet the power generated by the project will be sold in local currency. Foreign investors require the government to make all or most of the payments under the Power Purchase Agreement in foreign currency, and to cover the respective exchange rate risk. As a consequence, the cost of power in local currency will rise if the exchange rate drops.

In times of economic crisis, governments and public utilities which have committed payments under PPAs face a double-bind: the cost of power goes up because the local currency loses its value while the demand for power shrinks, causing the cost of power to increase even more due to take-or-pay contracts. Several countries have faced such situations in recent years:

?? The government of Indonesia entered into Power Purchase Agreements when the US dollar had a value of 2,450 Indonesian Rupiah. In the fall of 1997, the East Asian financial crisis broke out, and within a few months the cost of the dollar rocketed to 15,000 Rupiah. Demand for power slumped, and Indonesia had to default on the payments to the IPPs (many of which were based on corrupt contracts in the first place). The falling value of the Philippine peso meant that within one year the payment obligations of the National Power Corporation to IPPs increased from 170 to 244 billion pesos .

?? Uganda carries the full exchange rate risk under the Bujagali PPA. The report of the World Bank Inspection Panel revealed that a depreciation of the Ugandan shilling against the US dollar “could have a potentially major impact on affordability”. The report continues to state:

> “A mild depreciation of the USh [Uganda Shilling] of 10% p.a. against the dollar would double the price to Ugandan consumers in 7 years, to the equivalent of 13-15 cents wholesale, or up to 20 cents on lower output [the retail level] – surely unaffordable. Indonesia provides the best recent example of IPP projects becoming priced above locally affordable rates because of currency devaluation. Painful renegotiation of contracts, alleged breach of contract and legal action has followed, at great cost to the IPPs concerned, dislocation to the electricity sector, and a sharp drop in investor confidence.”

<u>High cost of private power</u>

When power companies invest in power projects in developing countries, they generally expect high returns on the equity they invest – and are usually in a strong position to negotiate contracts. The governments of poor countries know that they will only receive support from multilateral development banks if they open up their power sectors to IPPs. They usually do not have the necessary legal and financial expertise to negotiate Power Purchase Agreements on an equal footing with the investors. In the case of private hydropower projects, the World Bank does not insist on international competitive bidding, which strengthens the negotiating position of investors further.

Due to their weak negotiating position (and at times also for reasons of corruption), poor governments have sometimes offered extremely lucrative terms to IPPs, including tax holidays and guaranteed returns on investment. To make matters worse, projects which managed to win particularly attractive conditions have set standards which investors expect to be replicated in other projects throughout the sector. For example, the utterly corrupt Dabhol and Paiton I projects served as models in India and Indonesia and thus wrought havoc on the power sectors of their countries. In the case of the Bujagali project, the World Bank management argued in its response to an Inspection Panel report that a public release of the PPA would "disadvantage the Government in any private projects to be negotiated in the future, since all developers will strive to have the Bujagali terms, even under different commercial and risk profiles".

"[I]n countries with little record of sound regulation", observe World Bank economists Robert Bacon and John Besant-Jones, the governments "have to carry an unduly high proportion of investment risks through performance and payment guarantees, aided by the presence of multilateral financial participation, in order to attract large investments to their power sectors from the private sector." On top of such undue guarantees, lenders tend to charge higher interest rates for loans to private projects, because they cannot take recourse to the assets of the sponsors if such projects turn sour, and their risk is therefore highly concentrated.

The generous terms offered to sponsors under PPAs and the hidden risks of hydrological, power demand and exchange rate uncertainties have caused the rates of power from IPPs to soar in many countries. In 2001, the average retail tariff of power in the United States was 6.9 cents per kWh. In many countries – including India, the Philippines, and Uganda – the electricity generated by IPPs cost (or was expected to cost) more than twice this rate. According to power sector analyst Wayne White, power from the controversial San Roque hydropower project in the Philippines will cost a staggering 32-51 cents per kWh. Electricity consumers in the Philippines now have to pay a special surcharge on their power bills to pay for the cost of IPPs.

Tanzania's experience with IPPs was particularly sobering. In June 1995, the state power utility TANESCO signed a PPA with Malaysian investors for a 100 MW gas-fired power plant. After extended legal battles, the project, Independent Power Tanzania Ltd. (IPTL), started supplying power to the national grid in January 2002. The World Bank's International Centre for the Settlement of Investment Disputes ruled that Tanzania was entitled to reduce the payments under the PPA, but the project still turned out to be a

huge burden to the country's economy. On August 31, 2001, Tanzania's Finance Minister wrote in a Letter of Intent to the International Monetary Fund:

> "TANESCO's financial problems will be further aggravated by new financial obligations following the completion of the arbitration case concerning the costs of the Independent Power Tanzania Limited (IPTL) power plant. (…) Under normal circumstances, there will only be limited use of IPTL's capacity for some years to come and, presently, TANESCO lacks the resources to make these payments. (…) The government will allow TANESCO to increase the average electricity tariff to accommodate partly the IPTL's financial requirements and compensate for inflation since the last increase in 1998. (…) The above measures notwithstanding, TANESCO will require TSh 26 billion in support from the budget during 2001/02."

"In the final analysis it appears that IPPs have often inflated supply prices for utilities", the World Bank concluded in a *Public Policy for the Private Sector Note* in December 1998.

6. Conflict and political turmoil

Many private power projects that were started with great fanfare ended up in court battles and political turmoil. In October 1998, Pakistan's Water and Power Development Authority (WAPDA) repudiated parts of the PPA for the Hubco project, a huge thermal plant widely admired in the early 1990s for its innovative financing structure. WAPDA claimed that elements of the PPA were "illegal, fraudulent, collusive, without consideration, malafide and designed to cause wrongful loss to WAPDA and the government of Pakistan". The agency cracked down on several other private power projects with similar accusations at the same time. Since 1998, governments, and sometimes civil society organizations, have taken independent power producers and their PPAs to court or to arbitration panels in Belize, Colombia, India, Indonesia, the Philippines, Tanzania and Uganda. Provincial and municipal authorities in China have meanwhile simply broken PPAs, including for electricity from the Ertan hydropower and the Houshi, Meizhou Wan and Shajiao coal-fired power stations.

In the Philippines, the national parliament asked for a review of all private power contracts in June 2001. An official IPP Interagency Review Committee in turn investigated 35 of the country's 42 Power Purchase Agreements. The Committee found that only six of the projects which it investigated had clean contracts. 22 projects had financial problems which needed to be addressed, and five projects – including three hydropower schemes – posed legal and financial problems. "We will renegotiate these 27 contracts and in some cases, we may have to seek other legal remedies like arbitration", the chair of the Review Committee announced.

As popular wisdom suggests, you need a long spoon to sup with the devil. Power companies such as Enron and AES have close ties to the governments of the US and

other countries, and have not hesitated to use these ties to their benefit by pressuring Southern governments. US Secretary of States Colin Powell expressed concerns about the Philippines' IPP review in a meeting with the Philippine President and Energy Minister a few weeks after the Review Committee submitted its report, and asked that the Philippines maintain “cordial” relations with US American IPPs.

In Uganda, the government warned parliament in 1999 that the United States would reconsider their foreign aid to the country if parliament did not approve the Power Purchase Agreement for the Bujagali project. The US Treasury Secretary further pressed AES’ case when he visited Uganda in May 2002. In Indonesia, the sponsor of the Paiton I power plant warned that “if the government reneges on this contract, they’ll get absolute turmoil”. Indeed, the export credit agencies of the US, Japan, Germany and Switzerland, which had all supported tainted power plants in Indonesia, warned the Indonesian government not to pursue corruption charges against IPPs two weeks before it had to negotiate future aid flows with its donor governments. Any renegotiation of IPP contacts, the agencies warned, would “impair Indonesia and our ability to work with you in the future”.

In July 2002, Indonesia’s power utility and private investors reached an agreement on reduced payments for electricity supplies from the Paiton I plant. In 1998, the Indonesian government had also suspended the private Kahara Bodas geothermal power plant. In this case, no agreement could be reached. The investors sued the supposed off-taker, Indonesia’s state oil company Pertamina, for punitive damages. Pertamina managed to obtain an injunction from an Indonesian court, while the investors obtained an order to freeze Pertamina’s funds in the US from a court in New York. The project sponsor is also trying to freeze Pertamina assets in other countries, and the case remains unresolved.

In India, Enron used its close ties to the Clinton and George W. Bush administrations throughout the history of the corrupt Dabhol power project. “From an American perspective, as I am sure you have all heard before, many of India’s problems can be summed up in the five-letter word Enron”, a US Assistant Secretary of State warned when she visited India in July 2001. The United States also put pressure on the Colombian government to honor the contract of the controversial TermoRio power plant. About 50 members of Congress asked the US government not to grant Colombia trade benefits under the Andean Trade Preference Act unless the case was amicably resolved, and an Assistant Secretary of Commerce confirmed in April 2002 that the US had sent “a very clear message to the Colombian government” in this case.

7. Conclusion

“The Philippine Government has successfully solved the country’s power problems by the introduction of an aggressive BOT program, which opened up power generation to foreign investors,” John Taylor, the head of ADB’s Private Sector Group, observed in 1995. “The Philippine example is now considered to be something of a role model for the

rest of Asia. The Bank is in the process of providing assistance to other countries based on the Philippine example." And Linda Powers, vice-president for global finance at Enron, in January 1995 commented on the Dabhol project in India in a US Congressional hearing: "Working through this process has given the Indian authorities a real and concrete understanding of sound project lending practices. (…) Through our project, [Indian financial institutions] have developed a thorough understanding of project finance, international lending practices, project credit and security requirements, and the like."

Dabhol, the Philippine projects and many other private power plants have indeed taught the contracting governments important lessons. They fostered corruption and wrought havoc over host countries' power sectors and economies. The secretive Power Purchase Agreements of private power projects are not compatible with the tenets of transparency and accountability in public procurement. An approach to developing the power sector which is based not on competitive bidding, but on exclusive negotiations about often unsolicited proposals undermines rational planning, and renders impossible a balanced and comprehensive assessment of needs and options as proposed by the World Commission on Dams. The risks of this approach are compounded by the imbalance in expertise between host governments and investors, and the political pressure from Northern governments and the World Bank on host governments to quickly privatize their power sectors.

This lopsided approach again and again has resulted in contracts for power projects which were not needed, offered extremely attractive terms to the investors, and still delegated all major risks to the host governments. Favorable terms of investment, hidden costs and an oversupply of power has in several countries caused power prices to soar, reduced electricity sectors to chaos, and led to political turmoil over power tariffs, subsidies and the renegotiation of contracts.

Public power projects are often no more rational, transparent and accountable than private projects. The hydrological risk and the risks of insufficient demand are not particular to private power projects either. Utilities and governments face the risk that stream flows will be below expectation also in the case of state-owned hydropower projects. Even without the take-or-pay clauses of PPAs, governments bear the cost of power plants whether or not the demand for their generating capacity exists. However, private power – through the incentives for corruption and oversupply – has increased the irrationality of power sector planning in many countries. In the case of private projects, governments have to add a hefty return on investment to the power bill – without being able to offload any major risks to the investors in return. While governments can afford to build infrastructure projects with a perspective of 30-40 years, private investors want to recover their investments over a much shorter period. Private foreign investors also tend to rely much more on foreign consultants and imported equipment than state utilities when they develop a power project, and thus do not contribute towards capacity-building in the host country's power sector.

“Far from the expectation that privatisation could increase efficiency and therefore cut down production costs, the involvement of private investors has only added financial burden to [the national power utility]”, the NGO Pelangi comments on Indonesia’s experience with private power projects. And Kent Rowey, head of project finance at an international law firm in the United Kingdom, observed in December 1997:

> “It is often assumed that the use of finance techniques such as build-own-transfer and build-own-operate in Asian private infrastructure programmes relieves the host country from the liabilities associated with financing, building and operating infrastructure projects. This is a misconception. The reality is that many of the risks of the project remain with the host government under the support contracts they enter into. (…) The result of this is that governments commit themselves to billions of dollars worth of contractual obligations, all due in a lump sum, to protect investors and lenders against foreign exchange risk. (…) Multiply this situation by the large number of projects in the region and it begins to look like Latin America, circa 1979 all over again.”

Growing awareness about the negative impacts of Power Purchase Agreements and resistance from NGOs have made the development of new private power projects more difficult. Ten years after the start of the boom, governments and financial institutions such as the World Bank need to take stock of the experience with private, PPA-based power projects. Financial institutions should not apply any pressure on borrowing countries to privatize their power sectors and embrace risky private power projects. Governments should follow the rational, participatory approach to power sector development proposed by the World Commission on Dams. If a private power project emerges as the favored response to a country’s power needs from such a process, governments should insist that private investors assume a fair portion of the project’s risk for example through merchant power plants which do not rely on take-or-pay clauses. If governments enter into any long-term power purchase agreements, they should open such contracts to public scrutiny, and financial institutions should only support private power projects if their PPAs have been made public. Public accountability is the best means to check and balance the incentives of greed and corruption in private infrastructure projects.

“At the root of the financial and performance crises in the electricity sector lies the governance crisis manifested in the form of take-over of the governance functions by the unholy alliances of powerful interests”, the independent experts of India’s Prayas Energy Group argue. “Thus, in order to address the financial and performance crisis in a fundamental manner, we need to eliminate the control of the alliances of vested interests over the governance functions. This, in turn, would require establishment of transparency, accountability and public participation in the governance functions.”

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