

Mobilizing Resources for Power Sector Development: A Cautionary Note about “Regulation by Contract”

By Robert Eric Borgström*

Overview

Independent regulation has long been considered an essential element in creating the environment for the mobilization of private sector investment. Nonetheless, and despite the optimism with which this concept was promoted throughout the 1990's with respect to the developing and transitional economies, potential investors have often been disappointed by the slow pace of reform. The uncertainties of dealing with fledgling regulators and the interventions of governments to keep tariffs at politically acceptable, but less than cost-reflective levels, have conflicted with a rapidly growing demand for electricity and the need to raise capital for infrastructure projects. As a result, some propose that the classical regulatory framework be restructured to incorporate “Regulation by Contract” with the objective of mobilizing resources over the near term. This paper reviews the objectives of independent regulation as well as the pragmatism of regulatory contracts and cautions about the risks to sustainable economic development that may derive from the latter.

Projected Energy Demand and Investment Requirements

The U.S. Department of Energy's Energy Information Administration (DOE/EIA) projects that by 2030, the worldwide demand for electricity will be 30,364 billion kilowatt hours (BKwh); this is an average annual growth rate of 2.4 per cent.¹ To meet this growth in demand, it is expected that generating capacity will need to increase by 61 per cent from 3,741 Gigawatts (GW) in 2004 to 6,014 GW by 2030. This is an average annual increase in capacity of 87 GW.²

Most of the growth will occur in countries outside of the Organization for Economic Cooperation and Development (OECD). Non-OECD countries are expected to require an additional 1,695 GW of generation capacity over the period 2004-2030, an average annual increase in capacity of 65 GW. This incremental capacity is equal to 110 per cent of the installed capacity in non-OECD countries in 2004 and approximately the equivalent of the installed capacity in the United States and OECD-Europe in that year.³

In 2003 the OECD/International Energy Agency (IEA) conducted a comprehensive review of worldwide energy investment requirements. That review estimated that an investment of roughly \$9.8 Trillion (in 2000 dollars) would be required over the years 2001-2030 to develop a power sector infrastructure capable of meeting the worldwide growth in demand for electricity that is anticipated over that period. (\$4.1 Trillion and \$.4 Trillion will be required for new and refurbished generation, respectively; \$1.6 Trillion will be required to extend transmission grids by 3.7 million kilometers; and \$3.8 Trillion will be required for distribution networks.)⁴

Of the expected total investment, \$5.1 Trillion (51.9%) is expected to be made in developing countries. (\$2.2 Trillion for generation; \$.9 Trillion for transmission; and \$2.0 Trillion for distribution.) This is an average annual investment of \$170 Billion.⁵ According to Fatih Birol, IEA's Chief Economist,

Mobilizing the capital to build new power stations and add sufficient transmission and distribution capacity may prove an insurmountable challenge for some developing countries. The risk of underinvestment is perhaps greatest in many African countries and India.⁶

Clearly these countries will need to look beyond their national wherewithal to the private sector for the required investment.

Mobilizing Investments for Power Sector Infrastructure Development

Prior to the 1990's, investment in the power sector infrastructures of developing and transitional economies was typically the role of the state. Following the collapse of the command economies, competing demands for sharply lowered tax revenues required a broad reorientation of investment strategies to include private sector participation. These states quickly learned that just proposing the societal benefits to be derived from infrastructure development was insufficient in raising capital from the private sector. Not only must the state compete for credits and grants with the investment opportunities proposed by other states, the prospective lenders and grantors

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See footnotes at end of text.

demanded structural reforms to help mitigate the risks of investing in an economy that was in the early stages of market-reorientation. Included in those required structural reforms were:

- (1) The creation of a legal structure that respects the rights of the private sector
- (2) The corporatization of the enterprise (e.g., the state electric company) into a business unit (e.g., the national electric company, a joint-stock company) with the presumption that it would not be run by the state's political leadership;
- (3) The commercialization of that business unit with the idea that it would become market-oriented, charging and collecting tariffs that fully recovered costs of production as well as a reasonable return on investment; and
- (4) The establishment of a regulatory authority that would act as a proxy for competition over natural monopolies and ensure, on behalf of stakeholders, that there would be transparency and stakeholder participation in economic decision-making.

In 1993, The World Bank's seminal policy paper on institutional, regulatory and financial reform made it clear that:

"A requirement for all power lending [by The World Bank] will be an explicit country movement toward the establishment of a legal framework and regulatory processes satisfactory to the Bank. To this end, in conjunction with other economy-wide initiatives, the Bank will require countries to set up transparent regulatory processes that are clearly independent of power suppliers and that avoid government interference in day-to-day power company operations (regardless of whether the company is privately or publicly owned). ..." [emphasis in the original]⁷

Independent Regulation

The independent regulator model derives from English Common Law. The regulator, acting in the public interest, is given considerable discretion to take decisions on tariffs and service issues within a framework of laws and regulations. These decisions are made transparently and with full accountability. Public proceedings are an integral part of this process and stakeholders are pro-actively given opportunities to present their views to the regulator for consideration before the decision is taken. Within this framework, an affected party's avenue of appeal is through the court, but only with respect to procedure. The regulator's substantive decision, insofar as it was reached by accordance with lawfully established procedures, is not subject to further review. Moreover, it is the internationally regarded best practice that regulators, although they are appointees (usually of the president) may not be removed from office during their tenure except for legal cause.

Although many developing and transitional economies adopted this framework (or leaned heavily in that direction), the functionality of many recently created regulators is still a work in progress. Whereas the objective was to establish a truly separate and autonomous organization of government that exercises independent regulatory discretion, many so-called regulators are either:

- (a) "separate regulators" – a functionally separate organization is established within a ministry that acts with quasi-independence but whose "decisions" are either recommendations to the minister, who has the "final" decision, or decisions that are subject to *de facto* ministerial review (e.g., allowing the regulator's independent tariff decision to be published in an official gazette).⁸ Or,
- (b) "embedded regulators" – one or more functions (e.g., offices, departments, "desks", etc.) that are set up within a ministry or ministries and perform regulatory duties subject to the review and coordination of higher governmental authorities.

In either of these cases, regulatory decisions are ultimately left to the discretion of a politician who may take or review decisions with a view to achieving purely political objectives.⁹ This regulatory risk ("regulatory capture") – i.e., the degree to which the regulator is actually given "independence" to take regulatory decisions – is a significant issue for potential investors.¹⁰

In 2003, The World Bank revisited the effectiveness of the independent regulator model:

With the benefit of close to 10 years of experience [since The World Bank's policy paper in 1993], we find that *the expected benefit of independent regulatory commissions following general tariff principles – a commercially viable power sector that benefits both consumers and investors – has not been realized.* [Emphasis in the original.] The basic problem seems to be a "weak governance environment". This, in turn, has meant that new commissions have often failed to achieve independent and technical decision-making. Although new regulatory insti-

tutions have been created, it appears that in some countries “institutional change ... changed nothing” or at the least very little. ...¹¹

Accurate as this statement is, the view it represents is somewhat impatient. Ten years of experience is a short time-line for the building of regulatory credibility. One should view The World Bank’s 1993 policy paper as the starting point of a generational process. The regulatory framework it outlined will not quickly replicate the commercial successes that regulators operating under more mature, free market conditions have achieved after lengthy experience.¹²

Nonetheless, Bakovic et. al. are correct that the problem of resource mobilization remains to be addressed. Over the period 1990-2006 private sector investment in the power sectors of developing countries totaled \$267 Billion, an average annual investment of only \$15.7 Billion.¹³ This amount is only 9.2% of the annual investment required by the 2003 IEA projection (cited above).¹⁴

The remedy proposed by Bakovic et. al. in 2003¹⁵, and then reiterated by Brown et. al. in the World Bank’s 2006 “Handbook for the Evaluation for Evaluating Infrastructure Regulatory Systems”¹⁶ is a regulatory model incorporating “Regulation by Contract”.

Regulation by Contract

Regulation by Contract refers generally to “regulating” the relationship between governments and investors/service providers through the vehicle of bi-lateral agreements, such as a license or a concession contract. The agreements may be either stand-alone documents or negotiated terms embedded within a suite of privatization agreements, secondary regulations, decrees or even the power sector reform law itself.¹⁷ Typically the agreements include detailed provisions for a return on and of investment, specifications with respect to quality of service, tariffs and a mechanism for their adjustment over time or in consideration of other exogenous variables affecting the service provider’s cost of service (e.g., inflation). These contracts may be subject to administration by the country’s regulatory authority (if one exists; many such contracts precede the functionalization of a regulator), but enforcement is left to the country’s legal system. The operative effect is that the regulator may have a monitoring function with respect to the contract’s implementation, but its regulatory discretion, if not altogether precluded, is greatly restricted.

The issues being addressed by this restriction are those of regulatory capacity and commitment.¹⁸ Of what comfort to a potential investor is the prospect of being subject to the decisions of a newly established regulator who is wrestling with organizational start-up issues such as (a) insufficient staff; (b) untrained staff; and (c) inadequate secondary legislation (rules, regulations and procedures)? Lacking a regulatory “track record” by which the risk of an investment can be estimated, how confident can the potential investor be that the revenue assumptions underlying the proposed investment will remain in effect throughout the project. What guarantee is there that the regulator will not implement a new set of rules each time there is an application for tariff adjustment?

These “teething” issues are impediments to the mobilization of resources although these issues should and can become less significant over time *if* – but *only if* – it is the will of the government to develop its regulatory capacity to internationally acceptable standards of policy and performance. As Eberhard notes:

Investors, operators and consumers will benefit from regulatory governance systems that match regulatory discretion with levels of regulatory commitment and institutional endowment. Regulatory performance can also be improved through mandatory, independent reviews of regulators; building the demand side for regulatory performance; and through sustained regulatory capacity building initiatives ...¹⁹

Owing to the urgency of mobilizing resources, there is validity in adopting the hybrid approach of combining regulatory independence with a clearly specified regulatory contract that is negotiated by (and, therefore, has the buy in of) political authorities. A bi-lateral contract of this kind is certainly likely to be signed with comparative ease relative to a lengthy regulatory process (particularly with a start-up regulatory regime). However, this should be viewed as an interim measure *while independent regulatory capacity and credibility is being developed*.

Bakovic, et. al., disagree. They argue that:

in many developed countries, multi-year price or revenue caps, *which are a form of regulation by contract*, have become the system of choice in setting retail tariffs both for new regulatory commissions, such as exist in England and Wales and the Netherlands, and old regulatory commissions, such as exist in the United States. ... In effect, they have decided to give up regulatory

discretion because they expect that they will get more efficient performance from the regulated entity if they commit to a multi-year tariff regime. ... This suggests that a performance-based, multi-year tariff-setting system, the key component of the regulatory contract, should be the preferred approach for regulating private distribution entities and developed countries and *not just for a transition period*. [emphases added].²⁰

It may be too early to judge whether the “Regulation by Contract” approach has been successful in mobilizing resources; over the period 2004-6, private sector concession contract investments in the power sector of developing countries have totaled only \$347 Million per year.²¹ Nonetheless there is risk to the sustainability of overall economic reform if implementation of the bi-lateral contract does not evolve to allow a maturation of the regulator so that it can exercise independent discretion on behalf of all stakeholders.

In this respect the case of the Jakarta Water Supply Regulatory Body (JWSRB) is instructive. Water service for the city of Jakarta, Indonesia, and its environs is a responsibility of the regional government. The operation of the system is undertaken by two non-Indonesian companies under the terms of 25-year concession contracts initially signed in 1998. JWSRB was established by decree of the Governor of Jakarta in 2001, but that decree did little to affect regulatory oversight of the extant concession contracts. The troubled history of ongoing disputes between the nominal regulator and operators over regulatory jurisdiction, tariffs and quality of services held in suspense is detailed in two interesting papers, one by Achmad Lanti, Chairman of JWSRB,²² and the other by Peter A. Bradford, former Chairman of the New York State Public Service Commission, who conducted a study of JWSRB for the Dutch Trust Fund.²³

Reflecting on his study and on regulatory contracts in general, Bradford comments:

Because the contract terms cannot be changed without the consent of the parties to it, regulation in this framework offers a high degree of assurance to investors. However, *it does not provide the type of consumer protection normally associated with regulatory systems that are based in statutes*. When a regulatory body takes its powers strictly from a contract, these public involvement and public protection functions, which are necessary when the government creates a privately owned or privately operated monopoly service provider, are often left to a ministry or even to a legislative body.²⁴ [emphasis added]

Conclusion

The principle of keeping market prices and the conditions of market entry free from unilateral control (either political, or the influence of any stakeholder group) should not in dispute. It forms the precondition for developing a free market economy that is the best, sustainable environment for the attraction of private sector investment. The independent regulatory framework embraces this principle.

Regulation by Contract address critical resource mobilization issues and, from the perspectives of investors and strategic planners, may do so more efficiently than the classical regulatory model. However, since these contracts are specifically designed to minimize regulatory discretion, they are effectively designed to preclude the essential, ongoing involvement of all stakeholders in economic decision-making that is at the heart of regulatory development and free-market economic reform. Moreover, there is a basic inequity in requiring customers of natural monopolies to accept contractual arrangements in which they have had no voice.

Extant regulatory contracts should remain in effect as negotiated; novation would adversely affect the government’s credibility and credit-worthiness. However, all future contracts between the government and service providers / operators / investors should encompass the view that independent regulation ensuring transparency and stakeholder participation is the long-term objective.

Footnotes

¹ DOE/IEA, *International Energy Outlook 2007*, p. 61.

² *Ibid.* Table H1 at p. 201.

³ *Ibid.*

⁴ OECD/IEA, *World Energy Investment Outlook 2003*, p. 434

⁵ *Ibid.* p. 448.

⁶ Birol, Fatih. “Power to the People: The World Outlook for Electricity Investment”. International Atomic Energy Bulletin 46.1 (2003).

⁷ The World Bank. “The World Bank’s Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory and Financial Reform.” Policy Paper, 1993, p. 14.

⁸ It must be noted that some “separate regulators” are given considerable regulatory freedom to act independently. The Tanzanian Energy and Water Utilities Regulatory Authority (EWURA), is a “separate” but functionally independent regulator that reports, administratively, to the Minister of Water. The enabling legislation – the EWURA Act of 2001, at Section 7(4) – specifically precludes the Minister’s intervention in the substance of a regulatory decision by providing that “... the Minister may, from time to time ..., give to the [regulator] directions of a specific or general character, on specific issues” but those directions may not be “*in relation to the discharge of regulatory functions ...*”[emphasis added]

⁹ A typical example is the government that is unwilling to be responsible for the increase in retail electricity rates (a transparent cost to the customer) even though any shortfall in revenue to the state-owned electricity company will likely require an increase in the subsidy to be provided by the national budget (a more opaque utilization of tax revenues).

¹⁰ See, for example: Lamech, Ranjit and Kazim Saeed, *What International Investors look for when investing in Developing Countries*. The World Bank Group: Energy and Mining Sector Board Discussion Paper No. 6 (May 2003); also: *Study on Investment and Private Sector Participation in Power Distribution in Latin America and the Caribbean Region*. Energy Sector Management Assistance Programme (ESMAP) Technical Paper 089. (Dec. 2005), p.45.

¹¹ Bakovic, Tonci; Bernard Tenenbaum and Fiona Woolf. “Regulation by Contract: A New Way to Privatize Electricity Distribution,” World Bank Energy and Mining Sector Board Discussion Paper No. 7, May 2003, p. 14.

¹² For example, the U.S. Federal Energy Regulatory Commission (FERC) was established in 1977, succeeding the Federal Power Commission (FPC) that was established in 1920.

¹³ The World Bank Private Participation in Infrastructure (PPI) Project Database. <http://ppi.worldbank.org>

¹⁴ OECD/IEA, *World Energy Investment Outlook 2003*, p. 448.

¹⁵ See Bakovic, et. al., *Op. Cit.*

¹⁶ See Brown, Ashley C., Jon Stern and Bernard Tenenbaum, *Handbook for Evaluating Infrastructure Regulatory Systems*, The World Bank, 2006,

¹⁷ Bakovic, et. al., p. 18.

¹⁸ See Eberhard, Anton. *Infrastructure Regulation in Developing Countries: An Exploration of Hybrid and Transitional Models*. Public-Private Infrastructure Advisory Facility Working Paper 4 (2007); also: Lamech, Ranjit and Saeed, Kazim. *Op. cit.*

¹⁹ Eberhard, p. 26.

²⁰ Backovic, et. al., pp. 20-21.

²¹ The World Bank Private Participation in Infrastructure (PPI) Project Database.

²² See Lanti, Achmad. “A Regulatory Approach to the Jakarta Water Supply Concession Contracts,” in *Water Management for Large Cities*, edited by Cecilia Tortajada, et. al. (London: Routledge. 2006).

²³ See Bradford, Peter A. “Capacity Building – Jakarta Water Supply Regulatory Body: Review of Functions and Operations,” Dutch Trust Fund, February 2006.

²⁴ Bradford, p. 4.

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