An Overview of Electricity Tariff Regulation

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According to neoclassical economic theory, competition creates economic efficiency, which in turn result in the optimal prices and allocation of resources across the economy. In practice, though, competitive markets do not work perfectly or may altogether impractical (i.e. in the case of "natural monopolies" such as network infrastructure like roads and transmission lines). Moreover, certain economic activities are accompanied by externalities, which are impacts of the activity that are not included in the market price. Pollution is a commonly cited externality.

I. The Purpose of Regulation

Governments intervene through regulation to compensate for market failures to protect the public good. Government regulation of the business falls into three main categories:

(i) Anti-trust laws that prevent firms from reducing competition through collusion or predatory pricing.

(ii) Regulation of prices and conditions of entry, for both natural monopolies and more competitive markets.

(iii) Quality-of-life regulation concerning welfare, health, safety, and working conditions.

In the electricity business, generation and retailing (i.e. the customer interface) can be operated as competitive markets, while transmission and distribution (the "wires business") are seen as natural monopolies. Power sector regulation covers all three categories described above.

Electricity tariff regulation is subset of power sector regulation that falls into last two categories. It aims to ensure that electricity consumers pay a "fair" price (i.e. similar to the disadvantaged social groups are protected. We refer to these concerns as regulation of price level and price structure, respectively.

II Prevailing Models for Regulation of Price Levels

There are two principal forms of electricity regulation practiced in the world today: price-cap and rate-of-return.

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Price-cap regulation is generally viewed as a relatively recent form of regulation, and is most frequently associated with the ongoing regulatory reform and privatization in the United Kingdom. In contrast, rate-of-return regulation is the most commonly used form of utility regulation in the United States, and has been in use for decades. Both forms of regulation, however, attempt to accomplish the same goal: to reduce the power of natural monopolies to restrain output, raise prices, and realize above-normal profits. In theory, the way the two regulatory methods accomplishes these goals differs considerably. In practice, however, the methods have tended to converge.

Rate-of-return regulation is also called coat-of-service regulation in that it essentially allows companies to pass through those costs which are deemed necessary by the supervising regulatory body to ensure that an adequate level of service is provided to end users. During periodic regulatory reviews, expenditures that are deemed appropriate by the regulatory body are added to the rate base, i.e., the total amount of approved costs that are to be recovered by the tariffs. In order that appropriate levels of capital investment are undertaken, supervising regulatory bodies (in United States, these are generally State public utility commission) estimate appropriate rates of return for the regulated utility, based in part on the cost of capital to utility.

Rate-of-return regulation has both industry’s virtues and its weaknesses. Rate-of-return regulation allows representation of the public’s interests regarding utility price setting, rates of return, and investment so that utilities cannot restrain supply and realize monopoly profits. However, rate-of-return regulation affords utilities few financial incentives to aggressively restrain or reduce operation costs.

Price-cap regulation has been the common means of regulation for the recently privatized industries in the United Kingdom. For several reasons, rate-of-return regulation was rejected as too expensive a tool that would require a large bureaucratic structure. Further, it was felt that obtaining from the regulated industry was always incomplete and relative to information possessed of industry, leaving the regulator in an inferior negotiating position relative to that industry. Moreover, as states earlier, rate-of-return regulation offered insufficient incentives for the utilities themselves to reduce cost aggressively.

To avoid these problems, the United Kingdom adopted what was felt to be a hands off, less bureaucratic, regulatory method based upon price caps and periodic reviews. This new form of regulation often goes by the name of RPI-X. RPI-X regulation is also often called “Performance-based regulation” in that it seeks to achieve economic efficiency through altering the incentive structure of the industry.

In essence, RPI-X employs price
caps which allow individual utilities (or companies) discretion over all investment and operating decisions. In contrast to rate-of-return regulation, utilities in the United Kingdom realize all gains from efficiencies achieved beyond the established benchmark up until the next regulatory review. RPI-X regulation has not only been employed in the electricity sector but also has been applied to recently privatized telecommunications, natural gas, and water industries. For expository purposes, a generalized form of RPI-X price-cap regulation works the following way:

Let us suppose $t$ is our base year and $p$, are electricity prices in the base year. The RPI in RPI-X regulation represents the change in the retail price index in the United Kingdom and $a$ measure similar to the consumer price index (CPI) in the United States. $X$ is generally considered to be a productivity factor, which could be positive if the industry is expected to operate more efficiently in the feature, or negative if efficiency declines are expected. The productivity factor, $X$, is based upon past performance and projected analysis if future productivity gains. A third variable (let's call it $K$) could be added to equation to account instance, an electricity company to directly pass through all cost related to changes in energy price (making our equation, assuming efficiency gains, RPI-X+$K$). This, maximum prices one year hence $(P_{t+1})$ should equal: $P_{t+1} = P_t + RPI-X + K$.

RPI-X regulation employs a multi-year review cycle. In the United Kingdom, depending on the industry being regulated, the review cycle has typically been from 3 to 5 years. This allows companies to realize the benefits of their cost reduction efforts over a set period of time, or until the next review cycle comes due. Upon completion of the regulatory cycle, the regulator conducts a new review and redetermines new benchmarks both for the initial set of prices and for projected future productivity gains. The regulator is then able to pass on some of the benefits of the realized efficiency gains to consumers.

In England and Wales, RPI-X regulation has been applied only to those segments of the industry still deemed natural monopolies (or not ready for complete competition). These segments are basically the wires (electricity transmission and distribution) portion of the business. RPI-X is not applied to the generation of electricity a sector in which the price setting mechanism is the national electricity pool. RPI-X is also currently being applied to electricity marketing for residential users (although this market is scheduled for deregulation in 1998). Prices in the other segment of the industry, generation and non-franchised marketing are in general freely determined in the marketplace.

The chosen base price in the United Kingdom was directly related to the asset value at the beginning of the initial regulatory period. The selected productivity factors tended to vary across segments of the industry, with the transmission companies assigned an initial $X$ of zero. For the twelve distribution companies, various $X$'s were applied, varying from zero to a positive top rate of plus 2.5. The franchised supply companies were assigned an initial $X$ of zero. The regulatory cycles for the three regulated industries have varied from 3 to 5 years.

RPI-X is supposed to provide utilities with a stronger incentive to reduce
costs than rate-of return regulation because the utilities themselves realize all the value of the cost reductions made beyond the benchmark. The other supposed advantage of RPI-X regulation is that it is also designed to reduce regulatory costs and provide a disincentive for the regulated to engage in costly activities designed to influence the regulator (an activity called regulatory capture). The visibility of a single national regulator may also provide for more accessible public scrutiny of regulatory decisions.

However, RPI-X regulation has some clear shortcomings, both theoretical and practical. One problem is calculation of the appropriate initial level of prices. In the United Kingdom, this proved particularly difficult because the government was also attempting to maximize the value of these companies for a successful initial public offering. Lower future electricity prices would have meant lower immediate gains to the treasury during the public auction of electricity industry assets.

A second problem involves estimating future productivity gains. In practice, this has proven to be a rather problematic process in United Kingdom. In order to achieve the desired allocation of future benefits achieved through realizing greater industry efficiency gains, the regulator would still need detailed knowledge of the industry and future market development in order to come up with a suitable initial price and projected future productivity gains. In additional, X would represent not expected future productivity gains, but rather some theoretical cutoff rate for rate for electric utilities to have an incentive to surpass in order to retain all of the cost reductions benefits that accrue beyond X.

Thus far, it terms of economic efficiency, RPI-X has been a clear success. In the United Kingdom, the RPI-X regulatory approach has induced cost reductions well beyond expectations. Electricity companies have been able to greatly reduce operating cost in large part through substantial work force reductions. As intended, the electricity industry has benefited financially because these cost reductions have made substantial contributions to the bottom line results. However, substantial controversy has surrounded the new form of electricity regulation. In particular, some dissatisfaction between the industry's stakeholders. I.e., investors, labor. And consumer. As a result of this controversy, several of basic tenets of RPI-X pricing have become have suspect.

III Regulation of price structure

Classical economic theory asserts that economic welfare is maximized when prices are set equal to marginal coast. Any deviation from this optimal level of pricing will lead to economic inefficiencies, with incorrect price signals being provided to buyers ad sellers. Sometimes, however, pricing to particular costumer classes may deviae from a marginal cost
structure to provide socio-economic benefits to that class. Its is up to the regulatory body determine whether and in what form these deviations (effectively, subsidies) are called for.

Subsidies may be broadly defined as all measures that keep prices for consumers below the market level, keep prices for producers above the market level, or reduce costs for consumers or producers by giving direct or indirect financial support. In other words, subsidies represent distortions in prices—whether due to market inefficiencies or direct government intervention—which result in incorrect signals being conveyed to producers and consumers.

Subsidies are not inherently “bad”. Indeed, most subsidies are initiated for good and sound purposes. But the impact of public policies must be evaluated independently from the appeal of their goals. Subsidies must be evaluated on whether they actually serve their intended purposes, at what cost, and how the costs and benefits are distributed and balanced.

Studies by OECD, the World Bank, and various NGOs have identified that some combination of the following broad objectives underlie most subsidy policies:

- Stimulate economic development
- Promote sectoral employment and/or investment
- Safeguard domestic supplies
- Reduce poverty or support the poor
- Provide greater access to basic living conditions

Extensive research from diverse groups—including government agencies, international lenders, and independent NGOs—suggests that many existing subsidy policies do not serve their stated purposes. All too frequently, subsidies for energy production or consumption contribute little to economic development or helping the poorest segments of society, but rather lead to greater economic inefficiencies. Benefits that might accrue from a subsidy may be neutralized by unintended side-effects. Alternatively, a subsidy may accommodate “free riders”, i.e. provide benefits to those who are not the intended beneficiaries. For example, subsidies for road transport encourage overuse of roads, creating pollution and congestion. Water subsidies often disproportionately benefit the rich, while agricultural subsidies are an expensive and ineffective way to maintain farm incomes. In summary, subsidies tend to impose burdens on public budgets while failing to achieve their intended objectives, or at best are inefficient means if realizing the target benefits.

Understanding the perverse impact of subsidy policies on economic efficiency, and even proposing strategies for reform, in often inadequate ammunition to garner political support for change. The many obstacles to policy reform include, among other factor:

- Opposition from vested interests
- Concern over distributional consequences, and
- Uncertainty

Subsidy beneficiaries resist reforms that might deprive them of their acquired advantages. These groups are often more focused than “taxpayers” or other broad public constituencies (e.g., java ratepayers) which ultimately bear the cost of hidden subsidies. Ben-
Benefits are more visible than widely dispersed and hidden cost. As a result, subsidy beneficiaries are generally more effective in preserving their benefits than groups that would be expected to have an interest in dismantling the subsidies.

Any subsidy reform has winners and losers, and subsidy reform must address the racial economic interest of the “losers” in order to succeed. Beneficiaries have based their economic decisions on support policies, and have likely grown somewhat dependent on them.

Uncertainty fear of the unknown has been reported as primary force in favor of preserving the status quo. Even the potential beneficiaries of reform may resist in the absence of clear policy alternatives.

Review of experience with subsidy reform in diverse international settings suggests that the most effective subsidies have the following characteristics:

- **Transparent.** Creating transparency in objectives, administration, cost and impacts of subsidy policies will raise questions about their effectiveness and existence. Exposing the costs and implications helps to clarify the often implicit choices embedded in hidden subsidy policies.

- **Formally justified.** Subsidies should not be maintained by default. Rather, the government should be required to regularly justify each subsidy, its effectiveness in achieving its target, and the actual distributive impacts of policy. The terms of evaluations should be agreed to in advance. If power system privatization is to proceed, the burden of proof must fall upon the government - rather than the privatized utility - to justify the need to diverge from market pricing. Governments can use this opportunity to evaluate the arguments of both winners and losers for given subsidy proposals.

- **Targeted.** Subsidies can be more cost effective if they are (i) carefully targeted to intended recipients, and (ii) delivered directly to these recipients rather than linked to production, consumption, or inputs. Direct subsidies are the least distorting in terms of their impacts on resource allocation, and benefit recipients far more than more circuitous mechanisms. If the goal is directly reach a target population, direct subsidies are superior.

- **Part of a comprehensive reform package.** Board-based policy reform, which involves liberating markets and restructuring sectors to create fair competition, may eliminate the root motivations for many subsidy policies. Financial discipline for the entire economy is essential for the success of any individual sector. World Bank Studies have shown that economic growth deteriorates dramatically above a threshold inflation rate of about 40 percent per annum. Interdisciplinary terms of both financial and sector specialist are important in successful policy reform.

- **Properly timed.** Financial crises such as the one currently facing Indonesia should be viewed as opportunities to re-evaluate subsidies. These are opportunities to open people’s minds toward broad-based reform, including rethinking the costs and benefits of embedded subsidies.

- **Quickly implemented.** Whatever specific strategies are adopted to eliminate subsidy distortions, there are competing views regarding the ideal pace of reform. Shock therapy is particularly
relevant where political commitment and social stability are ove time. An advantage of shock therapy is that it may produce result quickly, enabling governments to sustain political support for reform efforts. The World Bank has reported that countries in which liberalization successful than slow reformers. Rapid change as generally resulted in earlier and stronger recovery, and has also produced greater success in the long run.

- **Phase reform.** Has also proven more appropriate in some circumstance, particularly where governments are constraining by initial conditions, institutional capabilities, historical practices, or cultural attitudes. Government must build a constituency that supports required change. Coupled with compensating measures and adjustment schemes, gradual phase-in can help to cushion the transaction and minimize the social cost of removing embedded subsidies. However, phased reform requires a long-term political commitment to adjustment, even in the face of opposition from vested interests.

The funding of social and basic infrastructure service is a critical issue facing all governments. Many of these services, notably health and welfare services, are focused on the poorest segment of society, i.e., those least able to pay, so many users are unable to bear the full cost of service. Subsidies are typically employed to make these services affordable. At their best, these subsidies are targeted toward specific, needy recipients of government services; at their worst, they not provide benefits to the intended beneficiaries, result in poor resource allocation, and cause financial deterioration for the organization funding the subsidy.

Commonly used subsidy mechanisms include:

- Cross subsidies between users
- Direct transfers to consumers
- Direct government funding of enterprises and inputs (including contracting for services)
- Accepting lower rates of return

These mechanisms may be applied as source of funds, or as way to allocate funds. Cross-subsidies, for example, provide both sources and allocators, as they recover additional revenue from one group to reduce the costs to another. Direct transfers to consumers and direct government funding, on the other hand, are purely allocating mechanisms; the funds must be generated from outside of sector. Accepting lower rates of return is also an allocation mechanism, but it does not involve actual cash transfers. Seen within the tariff rationalization framework presented in chapter 1, mechanisms that sources of funds collect from consumers, while sources that allocate funds collect from the government.

Each method has its own advantages and disadvantages. Further, the methoded are not mutually exclusive, and are frequently used in combination.

**IV. Cross Subsidization**

Cross-subsidization between users has been the primary funding mechanisms utilized by GOI for the electricity sector. It is implemented regionally by means of the uniform national tariff; as previously mote, Java users support services to the outer islands. Cross-subsidies also transfer resources between classes, as higher tariffs to commercial
and large residential consumers support small residential tariffs.

The chief advantage of this approach is that it does not require a budget commitment on the part of government. In today’s financial environment, this is a significant advantage.

The chief disadvantage of cross-subsidies is that distorted results in production and consumption inefficiencies. Those who pay for the subsidy (face a price above the revenue-neutral marginal cost) will restrict their usage of the product, even though they might value additional units more than the cost of producing them. Conversely, those who receive the subsidy (face a price below the revenue-neutral marginal cost of supply) will be encouraged to expand their use of the product beyond what they should otherwise consume. The result of a cross-subsidy from commercial to small residential consumers is a shift of resources away from the productive sectors of the economy.

Cross-subsidization requires barriers to entry in order to prevent competitors from enter in the higher margin markets created by the “tax” on some users. The rapid growth of self generation among commercial/industrial electricity consumers in recent years illustrates what happens in absence of entry barriers. In turn, entry barriers can lead to further inefficiencies such as cost padding, failure to adjust to changes in demand, and delayed introduction of efficiency improvements.

Another disadvantage of cross-subsidization is that it generally lacks transparency. The extent of tax/subsidy is frequently left unquantified, with the level of subsidy is not easily discovered.

Examples of cross-subsidies are widespread in Indonesia and elsewhere. There are four principal types of electricity cross-subsidies:

- inter-class
- geographic
- lifeline
- levies

Few jurisdictions have been able to price electricity to each scustomer group based strictly economic (or financial) scost of supply. With an inter-class cross-subsidy, customers in one tariff class will pay more than their revenue-neutral LRMC-based tariff so that another class can pay less.

Many of examples of inter-class cross-subsidies throughout the world are rooted in the sociopolitical aspects of setting tariffs. Groups with the greatest political coherence and leverage often achieve a comparative advantage. The greatest distortions have traditionally occurred between commercial (and to a lesser extent, industrial) classes and residential customers. While residential customers are a clearly identifiable and politically coherent group. Commercial customers are more dispersed and less organized. In other words, commercial customers have traditionally been less likely to complain when targeted for higher tariffs.

Inter-class cross-subsidies are sometimes implemented by defining tar-
iff classes based on considerations other than cost of service. In Indonesia, hotels have been treated as a separate class, although there is little technical justification for doing so. In Egypt, “Motive Power” (i.e., industries using electricity for mechanical energy) for many years was a distinct tariff class, as are “Foreign Embassies” in other jurisdictions.

Geographic cross-subsidies, such as that implied by uniform national tariff in Indonesia, typically represent transfers from urban to rural areas, and can be either transparent or hidden. Thailand offers an example of transparent subsidies. The uniform national tariff collects revenues more than sufficient to meet the financial objectives of urban distribution company, but insufficient to achieve rural targets. The generating Company (EGAT) collects required revenue by charging a higher-than-average rate to the urban distribution (MEA) and a lower-than-average rate to the rural provincial distributor (PEA). The price is set to achieve the desired cross-subsidy which will allow each distributor to make its desired rate return. A similar practice has been adopted in Egypt; the electricity authority (EEA) sells to provincial distributors at whatever rates are required to achieve adequate performance given the revenue potential of the local customer base.

Indonesia has adopted a comparable procedure with its uniform tariffs, although the level of subsidy from Java to the outer islands is neither specific nor transparent. The disadvantage of this approach in Indonesia is the absence of a firmly enforced performance target for outside Java operations.

A third example of cross-subsidies are so called “lifeline rates” intended to provide low cost electricity to the poor at subsidized rate. Theoretically, these subsidies are intended to meet basic needs, e.g., low cost electricity to operate a light bulb, a radio, and a fan. In practice, however, the tariff is seldom targeted to the intended recipient group. Instead of a minimal consumption level of perhaps 20 or 30 kWh per month, many utilities offer the subsidy for the first 100 or more kWh consumed. Since there is no easy way to target the poor, the subsidy is frequently offered to all residential consumers, so that even the very rich receive their first block of consumption at a subsidized rate. In some utilities, 30 to 50 percent of total residential sales are thus subsidized. (With this high threshold, even moderate-income consumers are never confronted with a higher rate.)

The current tariff regime in Indonesia defines customers classes by their service connection circuit breakers and thereby provides PLN with a more effective means of targeting lifeline tariffs. For example, the R-1 class is constrained to a fixed capacity of only 450 VA. By granting a lifeline tariff to this class only, the incidence of “free riders” can be reduced. (Free riders are those customers who receive a lifeline subsidy on their first block of consumption even though they are not in fact poor.) In general, the existence of more onc tariff class within a single customer group at the same voltage level (e.g., R-1 through R-4, U-1 and U-2, I-1 and I-2) can be a useful market segmentation tool to more effectively target subsidies if they are shown to be justified.

However, there common pitfalls with lifeline tariff implementation. Even when a “lifeline” rate is appropriately
targeted, it is not uncommon to set the rate below the variable cost of supply (i.e., the cost of marginal fuel plus variable O & M). This pricing effectively underestimate the value of increased electricity consumption to all users receiving the subsidy. In additional, the complexity of the market segmentation and of getting consumers to understand highly segmented tariff structures.

Another variation of cross-subsidization is a specific levy on consumers. Under this concept, a specific charge (or charge rate) is assessed to all consumers of a service. The approach has been adopted to fund the development of large hydroelectric projects in China and energy efficiency in the United Kingdom. It has also been proposed in Indonesia under the Kawasan Timur Indonesia (KTI) program to fund Eastern Island rural electrification.

The clear advantage of a levy as a transfer mechanism is that the cost is explicit, and consumers are informed of the intended use of tax revenues. Evidence suggests that levies have lower administrative costs relative to other transfer mechanisms. However, consumption of the product being taxed will likely be reduced among industries that rely on the product intensively as an input.

Streetlighting costs are one type of levy already used in Indonesia. Due to metering and billing problems, it is often collected as a percentage adder to the bills of one or more consumer classes, even though consumption is not clearly related to these classes, nor do they have any control over the total level of consumption.

While levies clearly have the advantage of broadening the base for redistribution, the charge is not related to the services received. Economists generally argue that it may be more appropriate that the base for funding assistance programs consist of all taxpayers rather than be confined to the users of a particular service. This reasoning leads to the conclusion that, apart from budget impact, there seems to be little justification for adopting a levy on users instead of a more general scheme of taxation to fund the subsidy.

Direct Transfers To Consumers

Cash payments to supplement the incomes of targeted groups are often suggested as the most efficient form of transfer mechanism. Supplementing the income of target groups avoids the need to operate public enterprises on a non-commercial basis. Further, consumers are free to spend the supplement on goods or services of their choice to maximize personal welfare.

Unfortunately, it is difficult to translate theory into practice. A significant problem with direct cash transfers is the identification of target recipients, and the human tendency for people to claim transfers intended for others. For example, efforts to target rural residents create an incentive for non-rural residents to adopt a rural “identity” so as to
claim benefits. There is an increased incentive to distort facts, since the transfer is cash rather than some in-kind service.

Vouchers, acceptable for payment of welfare or infrastructure services, are one variation of the direct cash transfers. Again, however, the identification of target recipients in difficult, and likely to be administratively costly.

Welfare programs in many of the United States illustrate direct cash transfers. The level of grant is frequently defined from the cost of a market basket of basic goods for food and shelter; recipients are permitted freedom in making their own consumption choices. The widespread abuse of these programs is well documented. Voucher-based "food stamp" programs, which provide vouchers for purchase of basic foods, have been instituted as a safeguard against welfare misuse; widespread misuse of these programs is also reported.

Indonesia has instituted a relatively effective program for directed payments called the inpres Desa Tertinggal (IDT) program that targets specific villages (as opposed to households). However, as pointed out in chapter 6, the poorest households in Indonesia do not be effective to subsidize low income electricity consumers.

Direct Government Funding Of Enterprises and Inputs

The critique to alternative transfer mechanisms for the direct funding of enterprises and inputs more appealing. Although Indonesia’s current economic crisis argues against any increase in the government’s budgetary responsibility, the arguments in favor of direct funding are worthy of serious consideration.

Direct funding, which has been employed by GOOI in electric sector (and still employment to a limited extent), can reduce the efficiency distortions associated with cross-subsidies, and maintains the required barriers to entry. Further, there is a much greater incentive to scrutinize annual budget allocations than there is to monitor user-funded cross-subsidies. (Of course, difficulties in accurate monitoring remain.)

Fuel subsidies are one form of direct funding of inputs supported by the government of Indonesia. Indonesia today, GOI-mandated petroleum rice understates world market price on the order of 100 percent. The cost of this subsidy is paid directly out of the Indonesian state budget. Resulting electricity tariffs based on "official" fuel prices understates the true economic cost cost of electricity supply, and distort the pricing of fuel-consuming activities throughout the economy. While the primary fuel subsidy may be transparent, the cost and effects of this in terms of electricity consumption are not.

More sophisticated direct funding mechanisms are available that have less distorting effect in other parts of the economy and are more transparent. In Australia, the provincial and national governments are committed to a policy of public funding for so-called community service Obligations, i.e., Government-mandated programs which a public enterprise would not elect to do on a purely commercial basic, or which it would only elect to do commercially at higher prices.

Once the government is committed to fund these activities, it is also free to create competition between potential suppliers for the provision of services; private contractors as well as public en-
terprises are often permitted compete, as for example, in the provision of bus services. This competition, in turn, can help to control the overall cost of service delivery.

Of course, direct government funding can only lead to higher taxes, and it is often argued that increased taxation also has an impact on efficiency in resource use. Overall, the choice between clearly targeted cross-subsidies and direct funding involves judgments on the most efficient form of allocation.

One variation of direct funding of CSO obligation is an explicit government commitment to reimburse an enterprise for losses. GOI equity contributions to PLN in past years have effectively guaranteed the solvency of company. As a persero, it is less desirable that PLN should remain dependent on unplanned bailouts necessitated by inadequate tariff levels. Direct funding based on the cost of “Community Service Obligations” would be a far more transparent method of funding.

Of course, direct funding of CSO obligations is, to say the least, a concept subject to interpretation. Clear loss-making investment (and recurring operating losses) in rural electrification would probably qualify, if the data were available to identify their separate as a CSO; yet the lack of regular and systematic tariff increases is the single largest cause for PLN’s current financial crisis.

Accepting Lower Rates Of Return

When the government mandates loss-making services from an enterprise which the government cannot afford to fund directly (e.g., rural electrification), the obvious result is an inability to meet financial targets. Given severe constraints on budgetary funding, some governments have adopted the option of accepting a lower rate of return from publik enterprises. The obvious reasoning is that the non-commercial obligation drags down overall performance.

The Australian Commonwealth Treasury has suggested that the easiest way to account for non-commercial expenses that are not budget funded is to add them to income of enterprise for purposes of calculating rate of return. The costs of services provided at commercial prices are unaffected by the accounting, so the resulting imputed rate of return can be compared directly with the target return set for enterprise. His process also takes into account the higher asset base required to meet additional service obligation incurred. In effect, this accounting is an indirect funding mechanism. The government is accepting a lower rate of return in exchange for realizing its social objectives. Notionally, the concept is similar to direct funding in terms of adding earning to the income statement.

A critical difference, however, is that imputed earning do not contribute cash. If the amount of cash involved is small relative to the overall operation, this difference may not be important. However, the concept fails if the amount
of funding required is large, and the enterprise has project monitoring is unlikely to involve the same level of scrutiny that is applied in annual budget reviews when real cash outlays are involved.

The underestimation of asset values is a more hidden form of type of subsidy. Fortunately it is not used in Indonesia. Sometimes a government may use non-revalues in calculating rate of return. In one flagrant examples in early past-communist Poland, very large, new coal-fired power stations were being valued at approximately $100 per kW base on book values and exchange rate distortions. The results was to vastly underestimate the revenue requirement of system.

Regulatory Implementation

In order to properly regulate tariff, it is generally necessary to have an independent regulator. This means that although the regulatory board may be appointed by politician, they serve a fixed term and do not report to politicians. This is convenient for the politicians, in that they are free of blame from the voting public for the unpopular (but often necessary) decisions that the regulator may take. The regulator is expected to represent the public good in setting prices and administering codes. They must balance the need to ensure the financial viability of the operating entities in the power sector, economic efficiency, and socio-economic development concerns.

In addition, though, the power of the regulator must be based in law. A new electricity law is under preparation in Indonesia which the basic legal institutions exits Indonesia that can support the impartial and timely resolution of disputes that may arise from time between the regulator and the regulated entities.