

# JAMAICA AND GLOBAL TRENDS IN ELECTRICITY SECTOR REFORM – A Caribbean Picture

## (PART II)

**By Cezley Sampson, Director, National Energy Efficiency, Petroleum Corporation of Jamaica**

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### **Bulk Electricity Markets as a Reform Option**

In the third phase of market transformation, that of the bulk electricity market, competition amongst horizontally unbundled generators is introduced, as was the case in England and Wales (E&W) in 1990 and Bolivia (a country with the same system size as Jamaica) in 1996. Radical unbundling was introduced, with the structure being transformed from the vertically integrated form to a disintegrated one. The bulk electricity market arrangement adopts most of the principles of commodity markets. However, electricity inter-changeability is not as simple as other commodities, such as gold or oil as it cannot be stored for later use. One shipment of electricity at one point in time is not a perfect substitute for another shipment at a different point in time. This makes it difficult for arbitrage in electricity as is possible with other commodities. Despite physical and legal separation there are strong vertical economies between generation and transmission. There is also the need for system balance and this sets up a contradiction between the requirement for central coordination and the individual action needed for competition. Market power cannot therefore be entirely eliminated in electricity systems.

Bulk electricity markets entails bilateral contracting between generators and multiple local distributors, supported by a centralized pool, as was the case of E&W market (during the first 10 years) and the Bolivian market or a balancing spot market which provides for settlement balancing between contracted amounts and physical flows, as is the current case in E&W since 2001.

The important structural decision revolves around the separation of transmission from generation and the creation of horizontally unbundled independent generation companies. There is also the need to separate generation from the distribution lines business and to avoid distribution companies owning significant levels of generating capacity as this provides strong incentives for the distributors to favour their generating arm although this may not be the least cost plant when dispatching.

There is a lessening of the regulatory burden at this phase of transformation in that the need to set bulk energy tariff is eliminated. However, the regulator m regulators also monitor the operation of the market to guard against abuse of market power. The main regulatory effort can then be structured to concentrate on the natural monopoly network so as to prevent this sector from charging monopoly prices. Where there are only a few players in the generation market as is often the case in small emerging markets, the opportunity to exercise market power is significantly increased.

The bulk electricity market phase introduces product market competition, provides incentives for productive efficiencies and for distributors to rationalize their businesses into more efficiently organized enterprises. Market and technology risks are restructured and are more equitably distributed and the electricity industry becomes less vulnerable to the errors of central planning.

On the negative side, transaction costs are significantly increased from the several market

must retain the powers to approve the rules for the market agreements and technology risks. The cost of capital becomes much higher as the industry now has to secure its finances from the commercial financial market. Distributional problems are also raised if one segment of the end user market is liberalized and the household captive users are required to underwrite all the stranded costs. Balanced competition however introduces efficiencies, which more than counteracts the increased transaction costs.

Jamaica rejected the policy option of a bulk electricity market in 1995 when the country first considered privatization, on the grounds that this approach was more suited for large electricity markets. At that time there was still serious questioning as to whether it was possible to unbundle small systems of less than 1,000 MW.

The privatization process was abandoned in 1996 and state ownership of JPSCo was retained. In 2001 because of serious budgetary pressures government was forced to finally privatise JPSCo when 80% of the company's equity was sold to Mirant of Atlanta. Disintegration of JPSCo was again rejected despite the experiences of Scotland and Bolivia. Government formalized the liberalization of the generation market and in the new licences gave JPSCo only a three year exclusive contract to the generation market (ending March 2004), whilst granting 20 year exclusive rights to transmission, distribution and retail businesses. The privatization of JPSCo follows much the same approach taken with the privatization of the telecommunications industry.

The problems experienced with Cable and Wireless in introducing increased levels of competition will be repeated in the electricity sector. In the privatization of telecommunications the motivation was to secure high levels of investments, which was then needed. In the case of electricity, the motivation was to provide budgetary support so as to be able to liquidate some of the domestic debt.

### **Retail Competition as a**

#### **Reform Option**

The final phase of transformation is that of retail competition. The England and Wales, New Zealand and Nordic markets have since 2000 come closest to this structure. At the final phase, choice is allowed to all end users to source electricity supplies from competing generators.

Product market competition is extended from bulk supplies to retail supply or low voltage energy. In England for example consumers can now purchase their electricity supplies from supermarkets. To a large extent this option is not suitable for small and immature electricity markets.

## **Main Lessons Learnt**

As the industry moves from one phase to the next, increased levels of competitive pressure are exerted in the market, higher levels of disintegration are experienced and private participation and ownership expand at the expense of public ownership. Whilst privatization is a necessary condition for the realization of economic efficiency, the empirical evidence, as demonstrated in the England, Wales and Scotland reforms is that privatization alone is not a sufficient condition. Although in the Scottish reforms independent regulation was introduced, the evidence is that regulation is not a substitute for competition and is inevitably inefficient and should be confined to the natural monopoly network sectors. Regulatory institutions provide the opportunity for bargaining by interest groups and the misallocation of resources

There is no incentive for either publicly owned or privately owned and regulated electric utilities to find least cost solutions and reduce cost. Under both institutional arrangements, interest groups seek to relocate returns in politically undesirable ways. The gains to be redistributed are monopoly rents and such gains will be distributed in proportion to the strength of the bargaining power of the groups. The England, Wales and Scotland reforms clearly demonstrate that superior economic performance, private ownership, of the industry has to be accompanied by competition. The greater the extent of private ownership the greater opportunity there is for competition.

## **Conclusion**

The changes and developments which have been taking place, since the 1990s have been providing governments with a range of policy options as to industry structure, market mechanism, and regulatory frameworks. Governments are now in a better position in adopting public policies to take into consideration economic and institutional constraints and resource endowment in the design of their electricity supply industry. The flexibility is not only at the level of the industry structure but also over a range of sub-options. The global tendency therefore has been for structural reforms and the introduction of increased levels of competition in the Energy Sector Industry (ESI), accompanied by privatization.

Jamaica will find it a major challenge to create competition in its electricity supply industry following the conclusion of the initial three-year exclusivity for the generation market. It would have been easier to introduce the right structure before privatization rather than to use regulation to create competition after privatization. The policy approach of private ownership and competitive markets, offers far greater benefits to consumers, when compared to integrated publicly owned or integrated privately owned utilities with public regulation.

Technology has made it possible to disintegrate the industry. It has also allowed the development of a policy of competitive entry and increased competitive market operation. The effects of the technological developments and the application of new trading arrangements including the application of the principles of commodity market have changed the industry forever.

The changes in the electricity utility have merely expanded what started in the telecommunications utility in the mid 1980s and is helping to shift the boundaries between the state and markets, as well as the boundaries between public and private ownership and between political control. This is exercised through public regulation or public ownership and market forces.

### **Existing power supply to the national grid.**

According to the Sugar Industry Research Institute about 20MW of electricity could be produced at Frome Sugar Factory through the installation of a more efficient steam generating system and co-generation. Since this source of energy would normally be disposed of by burning, it is heartening to know that it can be transformed into economic use.

### **Conclusion**

This project will attempt to put forward a design model to determine the most economical mix of primary energy resources to be used by JPSCO and other Cogeneration facilities. This model should facilitate increasing our dependence on our natural resource so as to achieve reduced dependence on oil imports. With this arrangement, capital can now be used to increase the reserve capacity of our utility company by installing additional generating capacity. The model would also see a mix, which includes approximately 20% renewables superior economic performance, private ownership, of the industry has to be accompanied by competition. The greater the extent of private ownership the greater opportunity there is for competition.

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