LEGISLATIVE ALERT

Vol. 4 No. 7 ISBN 0855-2452 A Publication of the Institute of Economic Affairs January, 1998

THE ENERGY CRISIS

by

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INTRODUCTION

The country is facing a serious energy crisis. What must be done is to examine the situation, find the causes of the crisis, and seriously think of ways to ensure that there will be no recurrence of what the country is going through now.

1. **The Akosombo Factor**
   Since the Akosombo Dam was commissioned, Ghana has been heavily dependent on this one source of electric power. It has been assumed by the public at large that with Akosombo, Ghana has an almost unlimited source of electric power. The result has been that until this crisis arose, no serious consideration was given to finding alternative sources of power.

   What this crisis has starkly revealed is that Akosombo/Kpong power cannot continue to be relied on as the sole source of electric power for the country's needs. Its operation at maximum capacity depends on one important factor which is entirely beyond human control : the pattern of rainfall in the catchment areas of the Volta River and its tributaries. The very dry weather which the country is experiencing now, has been so before and will inevitably be so again at some time in the future.

2. **The Importance of Electric Power**
   Ghana has reached a stage of its development where electric power can no longer be seen as an amenity for a fortunate few. Without an adequate supply of electric power, the country's industries cannot grow; commercial activity will be stunted; and the quality of life of the people will be seriously affected. In such a situation, investor confidence will necessarily be eroded.

FINDING ANSWERS TO THE PROBLEMS OF ELECTRIC POWER SHORTAGE

1. **Saving the Dam**
   The most serious aspect of the present crisis which people may overlook is that the Akosombo Dam itself is under threat. The Dam was built and designed to hold a certain minimum quantity of water all the time. A fall in the level for a prolongued period may cause damage to the fabric of the dam, with very serious consequences. The thought which should preoccupy the authorities concerned is how to preserve the Dam. As at now, and until the rains come, not much more can be done in this direction beyond the power rationing which is now in place to ensure that the Dam is not drained dry. It is possible that the late rains of 1998 may not be enough to fill the Dam to a level which will render power rationing unnecessary. Even if the Dam is

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filled to its full operational capacity, the present crisis should teach the need for very careful management of the waters of the Dam.

2. **Limits to the Extension of Akosombo Power**
It is quite clear now that Akosombo power must have its limits. Its extension to Togo, Benin and Cote d'Ivoire, and farther and farther inside Ghana, has no doubt been well intentioned. When the full operational level of the Dam is attained, serious consideration should be given to the simple practical question : How far Akosombo power can, and should be extended. This may mean that farther extension of Akosombo power to some remoter parts of the country must stop. It does not, of course, necessarily mean that some parts of the country must be deprived forever of electric power. What it simply means is that some other sources of power must be found.

3. **Alternative Sources of Power**
If Akosombo power alone is not sufficient for the country's needs, what alternative sources of power are available, and what are the options? Some options have been the subject of popular discussion. These are : (i) Additional dams (ii) Thermal power (iii) Nuclear power (iv) Solar power (v) Biopower

(i) *Additional Dams*
For a long time it has been suggested that some potential dam sites in other parts of the country should be exploited to produce power supplementary to Akosombo power. In considering whether or not to exploit any potential dam site, or even whether to exploit hydropower any further, serious attention must be paid to a number of important factors. Contemporary wisdom based on serious concern for the environment is that dam building can exact serious environmental and social costs, apart from the money spent on constructing and commissioning the dams. In the first place, a dam necessarily covers a wide area of land. The land may have been valuable agricultural or forest land, and may have contained substantial human settlements. It has been found that large dams may even pose health hazards. The loss of land and the social cost of dam building must therefore be weighed against the potential benefits of the dam.

(ii) *Thermal Power*
The obvious alternative to hydro power is thermal power, i.e. power generated from oil or gas. Prior to the commissioning of Akosombo, Ghana depended exclusively on thermal power. By that time, all regional capitals and a large number of urban centres had electricity from thermal sources. In the present crisis, the country has fallen back on thermal power. The Aboadze thermal plant is obviously meant to be a permanent source of power. However, the use of off shore barges to generate electricity from gas can only be a temporary measure. To supplement Akosombo power and to extend electric power to those parts of the country which cannot be reached by Akosombo power, thermal power would appear to be the most easily accessible and practicable option. It must be noted that thermal power creates atmospheric pollution. And it depends on oil or gas which Ghana does not produce at present. However, oil is always available, and as long as it can be paid for, it can be procured. If thermal power is going to be relied upon on a large scale, it is a matter of importance to decide precisely where plants will be sited; whether power generated will be fed into the national grid; or whether such plants will supply power to particular areas carefully chosen.

(iii) *Nuclear Power*
One option is the building of nuclear power plants. The general opinion seems to be that they are not a suitable source of power for Ghana in its present circumstances. There are nevertheless some people who think that this source of power should not be completely ruled out at some future date.

(iv) *Solar Power*
Solar power has been canvassed as the power source of the future for countries which have abundant sunshine. Unfortunately, solar power technology has not advanced to the point where solar power, in terms of quantity and cost, can compare with hydro or thermal power. It is, certainly for a country like Ghana, a potential power source for the future, and serious well-funded research must be conducted to determine this potential.

(v) *Biopower*
"Biopower" conveniently describes power derived from human, animal and vegetable waste. This waste which, in the raw state, poses serious problems of pollution, has been shown to be capable of being used to

generate power. The waste can be processed to produce methane gas which is a fuel. Alternatively, vegetable waste can be burned as a fuel. And the fuel so produced can be harnessed to produce electricity. The technology is relatively simple. The only serious consideration is whether power can be produced at an acceptable cost. Biopower may well be found to be ideal for generating electricity in small rural communities.

In practical terms, hydro and thermal power are the sources which can be relied upon to produce electricity on any large scale in the immediate future. The alternative sources of power should be the subject of research to ascertain where and how they can be used to supplement the major sources of power.

4. **National Energy Policy**

One thing which the present crisis makes clear is the need for a clearly defined national policy on energy. The formulation of such a policy is necessary because it would ensure that the country does not deal ad hoc and piecemeal with the problems of energy. Some of the matters on which such a policy must be based are :

(a) Which of the options for the production of power must be adopted, having regard to the power needs of the country?
(b) Research into alternative sources of energy
(c) Who should produce and distribute electricity?
(d) The role of private investment in production and distribution of electric power
(e) How electricity can be extended to the rural areas
(f) The cost of power and the price consumers have to pay for supply of electricity
(g) Must electricity be subsidised?

This list is not exhaustive. The idea is that a national energy policy must, as much as possible, take all relevant issues into consideration.

The formulation of such a policy should not be seen as the business of the government in power alone. To make it a matter of sectarian politics would be most unfortunate and would prevent the reaching of a consensus which is the best foundation for the policy. The TUC has suggested the convening of a national energy forum to discuss the energy crisis. This suggestion must be taken seriously, and the forum convened as soon as possible.

5. **Participation of the Private Sector in Power Production and Distribution**

Hitherto, the production and distribution of electric power has been a state monopoly. Policy makers should now decide whether the production and distribution of electricity should be done by the state alone, or by the state in partnership with the private sector, or solely by the private sector.

Private investors in the production and distribution of electric power will expect to make a reasonable profit on their investment. They will therefore invest only in those areas where there is a heavy demand for electricity, and the consumers can pay an economic charge. This points to consumers in commerce and industry, and in the urban centres. It is unlikely that private investors would want to go into the rural areas since rural power consumers in this country cannot pay the full commercial charge for electricity in the foreseeable future. The supply of electricity to the rural areas should therefore for a long time to come, be seen as a social service rather than a commercial venture. It does mean that supply of electricity to the rural areas will have to be subsidised. If this should be so, who takes responsibility for supply and distribution to these areas? This is an important question on which a clear policy decision has to be taken. Rural electrification must go on.

If private enterprise is to be persuaded to invest in power production and distribution, a clear decision must be taken on how and where such investment must take place. Obviously, the response to the present emergency in which many are acquiring their own electric generators for household and industrial use is not satisfactory. It must be seen as a very short-term response, rather than a permanent solution. The private investment envisaged here is large scale investment in carefully selected parts of the country. The private investors will not do this as a charity. They need incentives of various kinds including concessions on tax and duties on equipment they bring into the country, and an assurance they will be allowed to charge reasonably for their services.

6. **The Social and Economic Impact of the Energy Crisis**

The energy crisis has had serious economic and social consequences. In some cases there has been a sharp fall in production. Where attempts have been made to maintain production levels,

there has necessarily been a rise in the cost of production and a consequential rise in the prices of goods and services because of the use of private generating plants which are expensive to run. For those concerns which cannot operate at full capacity, there must necessarily be a waste of resources. Many of them, faced with reduced production, are compelled to reduce their work force, thus aggravating the problem of unemployment.

An important impact of the crisis is on the government's budget. If production falls, government tax revenues will also fall. The result of this drop in government tax revenues would be a widening of the budget deficit. If the deficit is financed by domestic borrowing, the private sector would be crowded out. In an economy driven by the private sector, such a development would slow down economic growth. The budgetary target of 5.6% growth in 1998 is therefore unlikely to be achieved.

With industries producing far below the normal level of capacity utilization, labour will lose its wage bargaining power, and living standards will decline.

At the social level, one serious impact of the crisis is its adverse effect on the operation of the country's educational institutions. The study time of students has been unavoidably reduced. Inadequate performance by students and poor examination results must therefore be expected. Generally, the discomfort which people are suffering because of the crisis is affecting public morale and may well flare up in some cases into open expressions of discontent.

7. **Mitigating Measures**

It is a gloomy picture that has been painted; but something can and should be done about it. The initiative in this regard must come from the government. First and foremost, it must be fully appreciated that there is a serious crisis which must be confronted not only with short-term measures, but also with longer-term or permanent solutions. A few suggestions will not be out of place.

(a) The tax imposed on the larger type of diesel generators which are to be used by industrial and commercial concerns, must be waived. This would give these concerns the incentive to carry on production at as near full capacity as possible.

(b) In order not to make the price of energy too high, the 60% tax on petroleum products needs to be reduced substantially or waived altogether. In this way the operational costs of energy production would be reduced, and this would in turn lead to a reduction in the price per unit of power

(c) The Public Utilities Regulatory Commission must come to reasonable terms with potential producers of energy about charges to be paid by consumers. A good balance must be established between the ability of consumers to pay, and the need for suppliers to get a reasonable return on their investment. Uneconomic prices will operate as a disincentive to suppliers. On the other hand, prices which are too high would be oppressive to the consumer.

(d) The human factor must be seriously considered. Electricity is not an inexhaustible resource to be had cheaply. It costs a lot of money to produce and distribute electricity. Hitherto, the consumers of electric power in this country have taken its availability for granted. For this reason many consumers waste power. It simply does not occur to them that electricity is a resource which requires prudent and economical use. It is necessary for consumers to be constantly reminded that wasteful use of electricity harms everybody. Even in the midst of the present crisis, many consumers have not appreciated the need to conserve power. They must be made to do so.

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