

# OF 'DUMSOR' AND GHANA'S ENERGY SECTOR CHALLENGES: PART 3

## A. Introduction

In Part 1 of this series, we stated some baseline and other statistics on the energy situation in Ghana. In analysing these statistics, we underscored that the current power crisis is not the result of lack of generating capacity as we would have in excess of 500MW to meet current demand conditions were all the plants fully functioning.

Then in Part 2, we examined in-depth the causes of the ongoing load-shedding exercise by elaborating the causal factors that had been stated in Part 1.

In this concluding paper, we provide short term measures to end the 'dumsor' and then medium to long term measures to ensure that Ghana has supply of electricity that will be sufficient for its needs.

## B. How Should These Challenges Be Resolved?

Measures to resolve the short term challenge are stated first, followed by measures to address the long term challenge.

### 1. Short-Term Measures

The 'dumsor' has lasted over three years, so emergency action should be taken in the following respects to address specifically the major factors enumerated in Part 2 in order to ensure that the 'dumsor' ends and does not recur.

- 1.1 The ongoing maintenance and upgrade at the thermal plants should be completed immediately. If funding is an issue, the government should make money available to the VRA to enable it to complete the ongoing work in all respects – securing parts, technical support, supplies, etc.
- 1.2 Whatever incomplete works, financial and other problems that are impeding completion of the Atuabo gas project and the delivery of gas to the thermal plants must be resolved urgently so that gas can be supplied for the operation of the thermal plants.
- 1.3 While gas is yet to be supplied to the thermal plants, the government should make money available immediately to the VRA to purchase light cycle oil to operate the thermal plants as soon as the maintenance and upgrade works are completed.
- 1.4 The ECG must immediately undertake a program to collect payment of unpaid bills from big customers – the government, institutions, and companies. As it collects payment the ECG must promptly make payment to the VRA to reduce its outstanding debt with the VRA.
- 1.5 Immediately, before the major raining season begins, the VRA and BPA should take whatever steps are necessary along the rivers that supply water to their reservoirs and the reservoirs themselves to ensure that the flow of water is unimpeded.

### 1.6 Power Barges and Emergency Generators

We have taken note that the government has signed a contract with Turkish firm Karadeniz Holding to provide 450 MW through power barges, to be delivered by the third quarter of 2015.

Our checks have revealed that these barges will run on fuel oil and thus generation costs are expected to be in the region of US¢17-20/kWh.

Since our overriding argument is that the crisis is not due to lack of installed capacity, our position is that the government shouldn't have gone for new capacity such as this in the first place. Nevertheless, now, before the barges arrive, the government should do as we have suggested in 1.3 above – provide funding immediately to the VRA for the purchase of light cycle oil to run the thermal plants.

As the barges will arrive anyway, we implore the government to fast track (1) the construction of the infrastructure for mooring and (2) the preparation of connection to the national grid by resolving any technical issues that might exist.

The emergency power generators which were brought into the country during the 2007 crisis should be refurbished immediately and used to augment power supply especially to the Tema industrial enclave. We estimate that about 50MW can be provided in a downside scenario.

Given that crude oil prices have declined, the amount of money needed to purchase oil for the Takoradi thermal plants and for the emergency generators in Tema is smaller than it would have been – so all the more reason why we're disappointed that the government hasn't taken this action already.

### **1.7 Energy Conservation and Demand Side Load Management**

There are still opportunities for reducing energy use through energy efficiency as well as shifting electricity use to off-peak periods. It is more economically efficient to reduce demand than to generate and deliver electricity to be used wastefully. To this extent, we call on the government to pursue vigorously energy conservation policies – e.g. free CFLs and LEDs – that ensure efficiency and thus reduce the substantial need for new generation and transmission capacity.

We implore the Energy Foundation and Energy Commission to be more active in playing leading roles in championing the introduction of energy efficiency programs and reforms which were started some years back.

These efficiency programmes enacted through mandatory policy initiatives should focus on the reduction of electricity usage at the Ministries, Departments and Agencies (MDAs) through energy audits and remote monitoring.

## **2. Medium to Long Term Measures**

The government must take steps that are medium to long term in nature in order to secure supply of electricity that will be sufficient to satisfy increasing demand as the country grows and develops.

### **2.1 IPPs and Offshore gas**

The availability of gas remains central to the government's planned proposals to safeguard Ghana's energy security. In the medium to long term, the development of Ghana's offshore gas reserves is expected to provide fuel feedstock to meet demand for the next 15 to 20 years. Though a number of Power Purchase Agreements (PPAs) have already been signed to deliver various new generation capacities, this would be severely hampered if the development of the offshore gas fields, namely the TEN and Sankofa-Gye Nyame fields, are delayed.

As stated in Part 2, the country currently needs about 191 mmscfd to power its thermal plants. This is projected to grow to 265 mmscfd in 2020 and 584mmscfd by 2030. In the wake of the unreliability of WAGP supply, offshore gas from Ghana's oilfields will be critical to the security of supply. In the low supply case, gas from WAGP and Jubilee fields is unlikely to meet demand

whereas WAGP, Jubilee, TEN, and Sankofa-Gye Nyame will meet our mid-case supply estimates. WAGP, Jubilee, TEN, Sankofa-Gye Nyame, other new fields and LNG regasification units will meet domestic gas demand for power generation in our high case estimate.

The slow pace in developing gas infrastructure has been a major impediment to supply. Thus, we implore the government to be proactive in planning and securing finance for the construction of new pipelines which will be required to connect the TEN, Sankofa, Gye Nyame and other gas fields to onshore gas processing plants and power plants. These proposals should include the possibility of reverse flowing the WAGP to Tema and expanding the capacity of the Atuabo gas plant.

## **2.2 ECG Credit Risk Issues (Power Sector Reform)**

The key to ECG becoming a credible offtaker is for the government to settle its indebtedness to the company and for the company to use innovative financing and procurement strategies which bring down its debts to manageable levels. This is the only way that IPPs and other investors wanting to enter Ghana's energy space can be assured of getting paid for the power they produce.

Moreover, there must be reform of the power sector. In particular, the distorted tariff regime has to be reviewed and revised in order to encourage investment in the sector and not give reason to prospective investors to demand sovereign guarantees, which are difficult for the government to provide.

## **2.3 Pursuing the 10% Renewables Mandate**

Renewables should play a bigger role in our energy mix and to this extent we implore the government as a matter of policy priority to pursue this vigorously. All public schools (especially the secondary schools), metropolitan, municipal and district assemblies (MMDAs) and communities removed from the national grid (e.g. the many islands in the Volta Lake) among others, should be encouraged to invest and/or partner with the private sector to construct mini-bio-digestors, biogas facilities and solar PV systems which will provide them localised electricity.

The excess electricity produced by these plants can then be sold to the grid through PPAs supported by regulatory and legislative provisions. The Renewable Energy Act 2011, Act 832, seeks to promote development and use of biomass technologies including biogas, biofuels, gasification and waste-to-energy. This is expected to achieve a 10% contribution of modern renewables (excluding large hydro and wood fuels) in the electricity generation mix by 2020 through feed-in-tariff, obligatory purchases and the setting up of a Renewable Energy Fund.

To these ends, we call on the government to remove taxes, levies, VAT and other charges on input costs for renewable facilities such as solar panels and digesters.

Increasing the amount of electricity produced by renewable sources could generate significant employment opportunities for the youth in the manufacture, installation and servicing of the technologies.

## **C. Conclusion for the Series**

The objectives of this series were to effect a better understanding of the 'dumsor', its causes, and what measures must be taken to end the 'dumsor' and to secure a future without 'dumsor' for Ghana. We believe we have met all three objectives:

First, we amply demonstrated with statistics and other information that there is generation capacity in excess of current demand, so, therefore, the 'dumsor' is not being caused by the lack of capacity.

Second, we revealed the real causal factors of the 'dumsor'.

Third, we stated short term measures to end the 'dumsor'. Also, we stated medium to long term measures to ensure that there is an increase in supply that exceeds growing demand.

The GGDP implores the government to take immediately the steps we have enumerated in order to end the 'dumsor' and to increase the supply of electricity in the future.

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