Understanding the Importance of an Energy Crisis: Part 2
Energy and Human Development in Uganda
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Introduction

Motivated by Dr. Gore’s research and work, a particular quote recurred in this research. “Above all we must be uncompromising in our determination to eradicate poverty.” A large component of global poverty is defined within the context of human development. The Human Development Index (HDI), as defined by the United Nations Development Programme (UNDP), in a gross measure of human development. It claims that economics, education, and health should not be separated and therefore are combined into a single index. The figure below indicates that extreme electricity consumption does not lead to greater development beyond 0.60 (defined by not red dots containing extreme electricity consumption data points).

The policy issues discussed in this part are that (1) the three different regimes should not address their energy issues necessarily identical and (2) an extremely small amount of power in the lowest regime can bring about (a) tremendous development in terms of using electricity to increase the efficiency of human activities and (b) development in terms of increasing reliability and availability of electricity in hospitals, schools, and businesses.

Energy Crises – Reliability

Throughout the Fort Portal, Uganda area, businesses and homes are faced with tons of power associated with electric energy (1) availability versus reliability, (2) ideal versus critical high care case situations, and (3) consumer demand versus supplier production. The benefits versus costs associated within these tensions represent a small array of choices. The Fort-Porat electromagnetic system is not able to immediately provide all of the health care costs which force them to separate the power based on medical service priorities. In this first case, the hospital administrators want to have what services have back-up energy systems and what services do not. The three medical prioritization levels are categorized in my dissertation as (see figures to the right).

Availability

The second micro-energy system is a rural community, a village with no grid availability, and varying consumer demands, which may or may not have constant change electric production devices in this second case, the businesswoman in the village analyzes what the local system issues (see figures to the left).

Physics of Energy Curriculum and First-Tier Empowerment

In 2004, Uganda’s Ministry of Energy and Minerals’ Annual Report discussed in detail the adoption of solar PV technology in the technical institutes. There were 110 instructors from 40 government trained technical institutions who offered an ordinary diploma in Electrical Engineering (DDE) and Electrical Installation (DIT) courses. These programs were expanded into the private sector. St. Joseph Technical Institute Virika in Fort Portal, Uganda, was one of the later schools. These technical schools produce the following professionals: welders, electrical diagnostic and installation technicians, auto mechanics, auto electric technicians, motorcycle mechanics, and solar technicians.

People in developed countries have created human societies which are so human activity energy efficient that they need to exercise in gyms in order to burn the amount of chemical energy absorbed into the body or risk the body turning the energy into fat. However, people in developing countries have more traditional societies where machines carry out their work. Consequently, the added benefit of electrical machines, for example, could increase the human activity energy efficiency of their society and thus enable people to do less manual work.

Human Power

On the left side of table, well known factors for energy consumption are given from medical technology research. These values are typically used to identify whether an infrastructure is under or over depending on level of activity and cost. It is also understood that human bodies have evolved into approximately 22% efficient organisms in terms of biological (chemical) energy in and mechanical (electrical) energy out.

Traditionally, the mechanical energy out has been used to work against gravity in the cardiovascular system (i.e. sleeping ~ 25 W) as well as to complete tasks such as farming and cleaning (~35 W). In the modern industrialized world, humans do not need to work, and therefore have a large amount of energy left over. In the figure above, below the yellow line the countries in which human power would work initially, many laughed. When the bicycle generator worked, there was the squeak out for known energy crisis events.

Moving from Meeting Critical to Desired to Ideal Electricity Needs: Uganda

Unlike a hospital face brush with the relatively new micro-energy system power as fast as possible and get it but so many other hospitals. This is because the generating machine was designed with the latest technological manufacturing capabilities for increased efficiency. If one had to choose “one” generator for a future situation, it is the next small but powerful micro-energy system, otherwise called renewables fit it by (relying the code), but the system had too many variants to resist reliability. This is because this generator was designed with the latest technological manufacturing capabilities for increased efficiency. If one had to choose “one” generator for a future situation, it would be difficult.

Consequently, the hospital has developed three medical prioritization levels for what services have back-up energy systems and what services do not. The three medical prioritization levels are categorized in my dissertation as (see figures to the right).

Comparing: Ideal-Level Category

This category consists of what the hospital administrators want to have. In this case, the hospital administrator wants to have what services have back-up energy systems and what services do not. The three medical prioritization levels are categorized in my dissertation as (see figures to the right).

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