

Avenues for Tariff management

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Comparing losses in other countries

- ▶ Ghana - 24.3%
- ▶ Cameroun- 11.05%
- ▶ Angola - 11.26%
- ▶ Cote d'ivore - 14.32%
- ▶ Egypt - 10.95%
- ▶ South Africa - 8.39%
- ▶ Kenya - 17%

Cost of losses at Transmission

- ▶ Total energy generated in 2018 = 15,820,527,000 kWh
- ▶ Total Energy lost in 2018 = 707,332,000 kWh (4.43%)
- ▶ Cost per kWh at transmission = 0.29 GHc/kWh
- ▶ The total cost of losses at transmission = $0.29 \times 707,332,000 = \text{GHc } 205,126,000$
- ▶ Cost of 1% of transmission losses = GHc 46,303,900
- ▶ **About 8.7 Million Dollars per annum**

Cost of losses at Distribution (ECG) 1

- ▶ **COMMERCIAL LOSSES**
- ▶ Total energy to ECG = 10,869,865,000 kWh
- ▶ Percentage commercial losses = 14.20%
- ▶ Energy lost due to commercial activities = 1,543,520,000 kWh
- ▶ Average End User Tariff (ECG) = 0.71 GHc/kWh
- ▶ Total cost of commercial losses = GHc 1,095,899,000
- ▶ About 206 Million dollars

Cost of losses at Distribution (ECG) 2

- ▶ TECHNICAL LOSSES
- ▶ Total energy to ECG = 10,869,865,000 kWh
- ▶ Percentage technical losses = 10.10%
- ▶ Energy lost due to technical losses = 1,097,856,365
- ▶ Average Bulk Supply Tariff= 0.45 GHc/kWh
- ▶ Total cost of technical losses = GHc 494,035,364.25
- ▶ About 94 Million dollars per annum

Result

- ▶ The total cost of distribution losses at ECG (Technical +Non-technical)

= GHc 1,589,934,364.25

About 300 million USD

- ▶ Estimated amount gained with 1% improvement in losses per annum =

GHc 65,429,397.70

About 12.3 Million USD

Tit bits for System Losses Reduction

Technical

- **Optimal Operation of the System**
- **Optimal Loading of Networks**
- **Use of Technology to Design, Operate and Maintain the Network (SCADA, eGIS, Enterprise Solutions)**
- **Invest in Networks Improvement Schemes**

Commercial

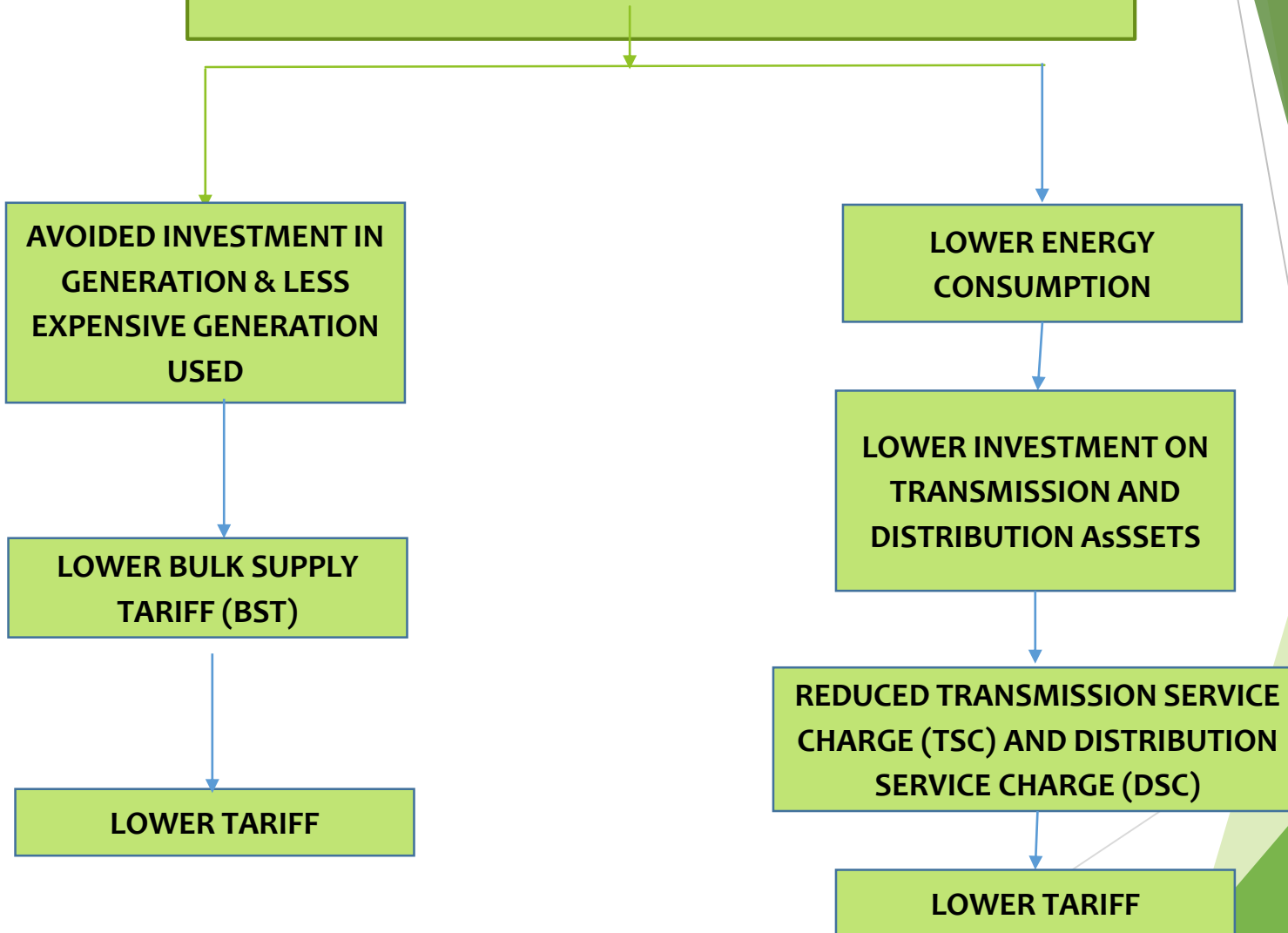
- **Procure more Meters (3-5 year stock availability)**
- **Standardized and Harmonized Prepayment Systems**
- **Procure Quality Meters with higher Accuracies**
- **Restructure the Revenue Protection Unit**

- **Attitudinal Change of Technical and Commercial Staff**
- **Continuous Capacity Building Staff especially in Business-oriented Courses**

Comparison of CFL lighting to LED lighting

CFL vs Incandescent Cost	CFL	LED
Watts used to achieve same lumens	14W	7W
Average cost per bulb	GHC5	GHC10
Average lifespan	8,000 hours	25,000 hours
Bulbs needed for 25,000 hours	3	1
Total purchase price of bulbs over 20 years	GHC15	GHC10
Cost of electricity (25,000 hours at 0.71GHC per kWh)	GHC 248.5	GHC 124.25
Total estimated cost over 20 years	GHC 263.5	GHC 134.25
Over savings (financial)	-	GHC129.25
Savings (yearly)	-	52%

**REDUCING TECHNICAL & NON-TECHNICAL LOSSES
AND
DEMAND SIDE MANAGEMENT**



NOTE: TARIFF = BST + TSC + DSC

Benefits of Energy Efficiency

- ▶ LOWER TARIFFS
- ▶ REDUCED ENVIROMENTAL POLLUTION (CO2)
- ▶ ENERGY COST SAVING FOR CUSTOMERS