Executive Summary

• 2014 was a financially challenging year with uncertainties in economic and energy environment
  – Revenue of **GHS 2,230.75** million. No Government subsidies to VRA in lieu of tariff shortfall compared to a subsidy of **GHS 644.27** million extended to VRA in 2013.
  – Operational loss of **GHS 74.13** million in 2014 compared to a profit of GHS208.11 in 2013

• Highest ever peak load of **1,970.9 MW**, signaling continuous increased electricity demand compared to **1,942.9 MW** in 2013.
  • Hydro availability above consolidated target of 90%
  • TTPS posted availability of 56.8%
  • Tema Thermal Complex registered 80% availability.
  • Navrongo Solar Power Plant recorded 100% availability.
**Key Challenges**

- Low gas supply from WAPCO.
- Low net inflows into Akosombo reservoir
  - 38% reduction in Crude oil usage.
  - 65% reduction in distillate fuel.
- No increase in tariff to account for higher depreciated currency.

**Some Generation Projects**

- Two (2) projects to be commissioned by end of year 2015
  - 220 MW Kpone Thermal Plant expected to be completed by year end
  - 110 MW T2 Project commissioned
• Review of Technical and Financial Performance for 2014
• Short Term Projects to Help reduce supply shortfall
• Medium term projects
• Challenges
PERFORMANCE
**THERMAL PLANT AVAILABILITY**

**TTPS Annual Performance Statistics for 2014**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Availability (%)</th>
<th>Forced Outage (%)</th>
<th>Capacity Utilization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32G1</td>
<td>21.01</td>
<td>17.30</td>
<td>5.59</td>
</tr>
<tr>
<td>32G2</td>
<td>71.60</td>
<td>61.26</td>
<td>5.59</td>
</tr>
<tr>
<td>32G3</td>
<td>74.62</td>
<td>11.98</td>
<td>20.85</td>
</tr>
<tr>
<td>T3</td>
<td>65.06</td>
<td>17.42</td>
<td>15.83</td>
</tr>
<tr>
<td>Plant</td>
<td>44.53</td>
<td>24.09</td>
<td>28.81</td>
</tr>
<tr>
<td>Target</td>
<td>85.00</td>
<td>5.00</td>
<td>75.00</td>
</tr>
</tbody>
</table>

- **Availability (%)**
- **Forced Outage (%)**
- **Capacity Utilization (%)**
FINANCIAL SUMMARY (2010 – 2014)

<table>
<thead>
<tr>
<th>Year</th>
<th>VRA-Operating Profit/(Loss)</th>
<th>VRA-Net Profit/(Loss) After Tax</th>
<th>GROUP-Operating Profit/(Loss)</th>
<th>GROUP-Net Profit/(Loss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>(970,000.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>(770,000.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>(570,000.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>(370,000.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>(170,000.00)</td>
<td>30,000.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The figure for 2014 shows a significant increase in operating profit compared to previous years.
ELECTRICITY DEMAND AND SUPPLY
• Total energy sold to VRA’s customers decreased by 576 GWh (6%) in 2014.

– Energy sales of **10,325** GWh in 2013 reducing to **9,749** GWh in 2014
ANNUAL ENERGY CONSUMED (GWh) BY CLASS OF CUSTOMER
2003 -- 2014
1. The reduction in 1999 demand was due to domestic load curtailment. Also there was load curtailment in 2006 and 2007.

2. The maximum demand for 2002 is higher than that of 2003 because Valco's load was curtailed.

3. Supply to SONEBEL (border towns Po and Leo) commenced in 2003 but is insignificant and therefore not visible on the chart. Supply to Sonabel from 2009 includes Youga Mine.
2014 FINANCIALS
• Energy Sales increased by 0.84% (GH¢18.66 million) to GH¢2,230.73 million over previous year’s sales of GH¢2,212.07 million).

• Cost of Sales increased by 11% (GH¢201.29 million) from GH¢1,851.06 million in 2013 to GH¢2,052.34 million in 2014.

• Administrative Costs increased by GH¢169.27 million (63%) to GH¢437.21 million (2013: GH¢267.93 million)

• Operating Loss of GH¢74.13 million compared with a profit of GH¢208.11 million in 2013.
GENERATION CAPACITY ADDITIONS
## GENERATING STATIONS
### (INSTALLED CAPACITY)

<table>
<thead>
<tr>
<th>VRA Plants</th>
<th>Installed Capacity (MW)</th>
<th>Dependable Capacity (MW)</th>
<th>Available Units (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKOSOMBO</td>
<td>1020</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>KPONG</td>
<td>160</td>
<td>140</td>
<td>105</td>
</tr>
<tr>
<td>TAPCO (T1)</td>
<td>330</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>TICO (T2)</td>
<td>330</td>
<td>300</td>
<td>200</td>
</tr>
<tr>
<td>T3</td>
<td>132</td>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>TT1PP</td>
<td>110</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>TT2PP</td>
<td>49.5</td>
<td>45</td>
<td>33</td>
</tr>
<tr>
<td>MRP</td>
<td>80</td>
<td>70</td>
<td>40</td>
</tr>
<tr>
<td>SOLAR</td>
<td>2.5</td>
<td>0</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>TOTAL VRA</strong></td>
<td><strong>2214</strong></td>
<td><strong>1975</strong></td>
<td><strong>1680.5</strong></td>
</tr>
<tr>
<td>SAPP</td>
<td>200</td>
<td>180</td>
<td>135</td>
</tr>
<tr>
<td>CENIT</td>
<td>110</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>BUI</td>
<td>400</td>
<td>340</td>
<td>260</td>
</tr>
<tr>
<td><strong>Total Ghana</strong></td>
<td><strong>2924</strong></td>
<td><strong>2595</strong></td>
<td><strong>2175.5</strong></td>
</tr>
</tbody>
</table>
Currently the power system of Ghana is experiencing load shedding of up to 700 MW.

The situation has been compounded by low inflows so far into the Akosombo reservoir.

VRA is working on additional generation projects to complement the efforts of government to improve the power supply situation.

- **220 MW KTPP** Project is currently under construction and is expected to be commissioned by the end of the year.

- **250 MW AMERI** Power project to be commissioned in 2016 depending on how soon financial terms are concluded.

- **38 MW TT2PP** Expansion project to be commissioned by 2016.
VRA Ongoing Short Term Generation Projects to Improve Supply Situation
VRA Ongoing Short Term Generation Projects to Improve Supply Situation

AMERI POWER PLANT – Site Preparation of Plant installation
<table>
<thead>
<tr>
<th>Expected Commissioning Year</th>
<th>Project</th>
<th>Installed Capacity (MW)</th>
<th>Total Installed (MW)</th>
<th>Implementation strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>T4 (SC)</td>
<td>110</td>
<td>110</td>
<td>VRA ECA-financed</td>
</tr>
<tr>
<td></td>
<td>T4 (CC)</td>
<td>60</td>
<td></td>
<td>VRA ECA-financed</td>
</tr>
<tr>
<td></td>
<td>KTPP Expansion</td>
<td>110</td>
<td>170</td>
<td>VRA/JV</td>
</tr>
<tr>
<td>2018</td>
<td>KTPP Phase 2</td>
<td>450</td>
<td>800</td>
<td>VRA</td>
</tr>
<tr>
<td></td>
<td>Coal Plant-1</td>
<td>350</td>
<td></td>
<td>VRA/SAPP</td>
</tr>
<tr>
<td>2019</td>
<td>Coal Plant-2</td>
<td>350</td>
<td>800</td>
<td>VRA/SAPP</td>
</tr>
<tr>
<td></td>
<td>DTPP</td>
<td>450</td>
<td></td>
<td>VRA/JV</td>
</tr>
<tr>
<td>2020</td>
<td>Pwalugu Multipurpose Project</td>
<td>48</td>
<td>135</td>
<td>VRA – multilateral Debt</td>
</tr>
<tr>
<td></td>
<td>Juale Hydro Project</td>
<td>87</td>
<td></td>
<td>VRA/JV</td>
</tr>
</tbody>
</table>
CHALLENGES
Rising Cost of Electricity Generation

VRA Cost of Energy-USc/kwh - Thermal & Hydro

[Graph showing the rising cost of electricity generation from 2011 to 2015, with the cost increasing from 9.00 USc/kwh in 2011 to 10.20 USc/kwh in 2015.]
BGT Increases Have Been Marginal In Real Terms Due to Currency Depreciation Despite Regular Adjustments by PURC
Tariffs Still Remain Below Cost Despite Recent Increases

![Bar chart showing the cost of generation and PURC Tariff from 2007 to 2014. The cost of generation remains below the PURC Tariff in all years.]
• Low gas supply since beginning of the year.
• Gas supply from Nigeria has always been erratic and 2014 was no exception.
• Discussions are on-going for additional gas supplies with potential gas supplies in Nigeria.
• Considering a proposal from Quantum Power Ghana Gas (QPRGG) to deliver re-gasified LNG to our plants in Tema.
2015 WAGP Gas Supply - Up to August 27, 2015

WAGP Gas Supply as of August 27, 2015 = 53,680.77 MMBtu/day

Expected quantity (90,000 MMBtu/day)

- Total (MMBtu/day)
- WAPCo Contractual Vol
- Rolling Average (MMBtu/day)
GAS SUPPLY FROM GHANA

• Jubilee gas production started late 2014 with frequent interruptions, mainly as a result of unavailability of enough thermal generation units or fault at gas supply facility

• Need for additional gas supplies because of inadequacy of gas supply from Ghana Gas Company & Nigeria to meet the national gas demand
Low Gas Supply Volumes

Gas Consumed (2014) - MMBtu(NGAS)

- Jan-14
- Feb-14
- Mar-14
- Apr-14
- May-14
- Jun-14
- Jul-14
- Aug-14
- Sep-14
- Oct-14
- Nov-14
- Dec-14
Ghana has had a deficit of over 100 MMscf/day since 2011, after supply from WAGP.

WAGP supply: 123 - 153 MMscfd
Jubilee supply: 60 - 113 MMscfd
Ghana Demand CAGR (2011-2020): 6.2%

Ghana will need between 230 MMscf/day and 850 MMscf/day of Natural Gas (for Power & Non-Power) in the next 10 years.
Below average inflows recorded in 2013 and 2014 resulting in low hydro generation.
Liquefied Natural Gas (LNG): 
VRA is exploring the use of LNG that will be re-gasified on a Floating Storage Re-Gasification Unit (FSRU) to supply gas directly to the Power Plants through a pipeline

Clean coal: 
Investigations have started into the development of a CLEAN COAL power plant. This is expected to play a dominant role in the national energy mix.
Payment performance of major customers critical to VRA’s financial health

Payment Performance of Major customers

* ECG purchases about 65% of the power generated by VRA.
* Payments from ECG has been erratic.
* VALCO unable to pay fully for power
* Weak financial health of the sector the biggest impediment to investment
* Situation will improve with arrangement to finance existing ECG receivables
* Long term solution needed to improve performance of distribution sector
SUMMARY

• 2014 was a financially challenging year even though we kept open real possibilities for continued growth and development
  – No Government subsidy to shortfall in lieu of tariff shortfall.
• Stable supply of gas remains highest priority.
• Regulatory framework to promote sustainable capacity additions also critical.
• Ghana’s geographic position and political and economic stability position must be properly leveraged.
CONCLUSION

• 2014 was a financially challenging year even though we kept open real possibilities for continued growth and development
  — No Government subsidy to shortfall in lieu of tariff shortfall.

• Stable supply of gas remains highest priority.

• Supply situation to improve as short term generation projects come online

• VRA’s financial health is critical to its ability to raise funding for new projects to meet demand growing at 150-200 MW per year at an estimated cost of US$200-250 million/year

• Regulatory framework to promote sustainable capacity additions is critical.
  — Full implementation of Automatic Adjustment Formula required to ensure full cost recovery
Powering the economy of Ghana and setting the standard for public sector excellence in Africa.

Thank You