Objective and Target Audiences

• Capacity building & soliciting real ideas for implementable strategies and tasks

Targets:
• West African Elected Officials,
• Key News Media
• Long-term Professional Staff for National & Regional Bodies

Background to this Workshop

• Numerous workshops, seminars and publications in Ghana and Nigeria since 2004
• Greater focus on WAGP and WAPP since late 2006: “what will make the Natural Gas Marketplace in the Sub-region work?”
  – February 2007 Abuja & July 2007 Accra
  – Over 100 delegates from Nigeria, Togo, Benin, Ghana
  – From industry, financial institutions, ministries, government departments & agencies, legislature, academia, consumer associations, development partners & private sector
• A communiqué was issued from Accra

Accra 2007: Barriers to Sustained Investments

Three major barriers:
• Inadequate tariffs
• Weak sector institutions – utilities & regulators
• Insufficient government attention and investment
Recommendations – Short Term

• An objective and effective consumer communication strategy – economic tariffs and corresponding service
• Independent generation of electricity and resale into the market – for fast expansion of generation capacity & increase the size of the secondary gas market

Recommendations – Medium Term

• Roles & responsibilities of sector institutions needs clearer definition for efficiency & effectiveness
• Institutions must be resourced - human, material and authority
• Institutional performance – benchmarked for accountability
• Utilities must be corporatized & recapitalized if tariff increases are to result in quality of service
• Need for long-term strategies for service quality and resource mobilization

Recommendations – Long Term

• New laws - mandating agency performance reviews, periodic review and rationalization of roles and responsibilities
• Need for strategic plan (including monitoring mechanisms) by assigned sector agencies - ensure implementation, accountability & consumer and stakeholder “buy-in”
• Need for study of sub-regional tariff structure aimed at harmonization and cost optimization

Observations/Concerns

• Countries did not seem ready for WAGP gas
• Commercial negotiations with gas producers needed to take place for additional volumes
• Need to fast track approach to put in place above systems to bolster investor confidence
• Governments must take immediate steps to ensure completion of WAGP without further delays
• Energy crises can set back sub-regional efforts
• Irrespective of model basic economic principles must be followed to ensure viability and sustainability
Abuja, May 2008

- Do we “really” understand the issues at stake and its implications for us individually, nationally, sub-regionally?
- Do the different stakeholders and levels of leadership understand the issues and if not how can we communicate it better?
- We seem to know the technical answers but why is there no action?
- How can we in our different roles contribute to the solution?
- How can initiatives such as these support our individual and institutional efforts?

Additional Issues for Discussion

- Specific questions related to WAGP deliveries and timing – broader implications for national/regional strategies
  - Solutions going forward (encouragement/pressure from purchasing countries; east-west pipe connection in Nigeria built as soon as possible to allow other producers to compete)
  - How to achieve WAGPA’s targets for solutions?
  - How to best address in future workshop agendas “report card”
  - Level of preparedness for receiving markets

Additional Issues...

- Numerous energy challenges in sub-region, especially energy costs/prices
  - Best alternatives for discussion and shared solutions
- Role of news media – how to increase awareness and commitment for high integrity coverage of energy situation
  - How to build technical knowledge in news organizations, recruit young journalists with technical backgrounds
  - How to develop, expand professional integrity – provide “common forum” for informing all stakeholders
  - Long term development of capacity; example of specialized associations (financial journalism) to improve reporting; example of specialized reporting
  - Importance of engaging with news media

Additional Issues...

- Strengthening institutions
  - Authority, funding, enforcement for national/regional regulatory bodies
  - Staffing and turnover
  - Status of authorities in Togo, Benin; interactions with Nigeria, Ghana
- How to close “loopholes”
  - Regional regulation for gas
  - Role of ECOWAS proposed regional electricity authority
Additional Issues...

- Role of elected bodies
  - How to improve/expand communication, engagement between legislative, executive branches (e.g., gaps in WAGP agreements for enforcement)
  - Importance for regulators of relationship with elected bodies – provision of technical information, advice to elected bodies
- Question of technical staff for elected bodies and regulators; capacity building, turnover/retention
  - UT/NARUC info on staff development
  - Specific challenge of retaining trained public sector professionals: commitment to public service, appropriate rewards and incentives
  - Focus on long term training, labor competition across countries, domestic higher education and degree choices
  - For elected bodies – specific staff for select committees

Additional Issues...

- WAPG, WAPP and level of regional preparedness
  - Funding for generation – investment promotion authorities?
  - Vision for WAPP to include regional standards for contracting, procurement, etc

WAGP Delays

- Only up to 60 MMcfd can be shipped as free flow. This shortage is caused mainly by
  - the lack of investment (tiered pricing of the Gas Master Plan),
  - the disconnect between eastern and western pipeline networks in Nigeria.
  - the increased demand for gas in Nigeria (primarily for power generation).
  - the increased demand for gas in LNG exports.
- The gas that is available is wetter than the gas that can be shipped via the WAGP under contract terms.
- Even if there was sufficient gas to meet foundation volumes, the compressor station will not be ready until March 2009.
- Lack of security in Niger Delta.

WAGP Development Issues - Scorecard

<table>
<thead>
<tr>
<th>Issue</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas availability</td>
<td>Improving economic environment for investors (pricing in NG, security in Niger Delta)</td>
</tr>
<tr>
<td>Gas specifications</td>
<td>Shell to provide gas processing facilities</td>
</tr>
<tr>
<td>Volume of free flow gas</td>
<td>NGC to increase pressure in ELP</td>
</tr>
<tr>
<td>Limitation of the pipeline capacity</td>
<td>WAPCO to add one more compressor</td>
</tr>
<tr>
<td>Security of the pipeline</td>
<td>Offshore Damage Prevention Program</td>
</tr>
<tr>
<td>Deadline completion date</td>
<td>Agreement on a new completion deadline with provisions for compliance</td>
</tr>
<tr>
<td>Funding of the WAGP Authority</td>
<td>Review of WAGPA charge for full compression; Set WAGPA charge for free flow gas</td>
</tr>
</tbody>
</table>
THE CHALLENGE: Integrating Fragmented National Power Systems

Source: Amedeo Simoncini, WAPP Presentation, May 2, 2008, Abuja

Interconnected Countries 2006

Source: Amedeo Simoncini, WAPP Presentation, May 2, 2008, Abuja

Interconnected Countries 2007

Source: Amedeo Simoncini, WAPP Presentation, May 2, 2008, Abuja

ECOWAS Demand-Supply Balance

Source: Amedeo Simoncini, WAPP Presentation, May 2, 2008, Abuja
Creation of WAPP Electricity Market: Medium Term Objective (2011)

Source: Amedeo Simoncini, WAPP Presentation, May 2, 2008, Abuja

WAPP Development Issues - Scorecard

- WAPP Operations Manual is developed
- A draft methodology on WAPP transmission tariff has been developed
- ECOWAS Regional Electricity Sector Regulatory Authority is proposed
- Many feasibility studies underway
- Funds raised from various sources
  - KEPCO is working on Information and Coordination Center
- Yet, there are delays in financing some projects

West African Energy Security Report

Energy and Development

Electric Power Consumption vs Gross National Income, per capita (2005, selected countries)
Energy Security

- Energy is essential for economic growth and improving standard of living
- High prices add to the cost
- Availability of resources – domestic vs imports
- Environmental impact of energy production and consumption
Issues

- Seasonal fluctuations and unexpected weather patterns increase the risk to the availability of electricity
- Risks are compounded because regional trade is limited (hence the importance of WAPP)
- But trade will not help unless
  - Additional capacity is built
  - System losses are reduced significantly

Investment Challenges

- $19 billion (mostly generation) between 2004 and 2020 v ECOWAS GDP of $100 billion
- The service quality has been poor → self-generation, non-payment and theft of electricity
- Under these conditions, it is difficult to address a key concern for investors (and state utilities): inadequacy of electricity tariffs.
- As regulatory agencies, tasked and empowered to set tariffs, implement gradual increases to allow cost recovery, they need
  - the support of governments and
  - to work hand in hand with the utilities to improve service quality so that the customers will see the advantage of paying their bills regularly.

Alternatives

- Much focus has been on gas but alternatives such as imported LNG or coal can be considered for mid to long-term
- Regional resources of oil, gas, coal, biomass, hydro can be better identified and their development can be encouraged
- Given large rural populations, solar, wind and other small-scale renewables can be useful