“Smart Development” Initiative

QUARTERLY PERFORMANCE REPORT
July - September 2007

Prepared for:
Energy Division—Energy Sector Governance Program
Office of Infrastructure & Engineering
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OBJECTIVES

USAID Strategic Objective and Intermediate Results

The strategic objective of the Energy Division is to improve the quality of life, increase economic growth, and promote sustainable communities by increasing access to environmentally sound energy and improving environmental management. And the intermediate result is increased production and use of environmentally sustainable energy.

Areas of special interest include:

- Improving policy, legal, and regulatory frameworks to establish necessary conditions of energy service delivery;
- Increasing institutional ability to provide or deliver energy management services; and
- Increasing public understanding of, and participation in, decisions regarding delivery of energy services.

CEE Smart Development Initiative

The CEE Smart Development Initiative fits well with the USAID objectives. We believe that enhanced public education on the basic principles inherent in the energy value chains and associated economics and technologies, as delivered through our New Era in Oil, Gas and Power Value Creation platform, can contribute greatly to improved energy sector performance worldwide.

Under the previous Energy Sector Governance grant, we worked with energy sector stakeholders in Ghana and established the Resource Center for Energy Economics and Regulation (RCEER) housed within the Institute of Statistical, Social and Economic Research (ISSER) at the University of Ghana – Legon. CEE worked with RCEER to improve its capability to address public education and participation, as well as transparency needs for effective energy sector governance while also contributing to development industry analysis and regulations.

Shortly after its launch, the RCEER was hired by the Ministry of Energy to study the effects of deregulating petroleum product prices on the consumers. The RCEER followed a very successful model of combining its academic resources with outside experts and delivered the study in two months. The Ministry has been using it and also shared it, as we understand, with the IMF among others. The Ministry organized a workshop on petroleum deregulation where RCEER presented material developed together with CEE. Although not scheduled activities under our grant, this study and the workshop helped the RCEER gain visibility and respect within the Ghanaian energy community as well as the public.

As part of the grant, the RCEER wrote a report on natural gas with two parts, a primer on fundamentals and a detailed guide to natural gas in Ghana; published a Guide to Electric Power in Ghana; held educational outreach activities associated with both of these products; developed university and professional course syllabi; initiated a database for the Ghanaian energy sector; and developed a sustainability plan. Much of what has been produced by the RCEER achieves goals established in our proposal for development of a “tool kit” that could launch and encourage the “smart development” process in Ghana.
The current cooperative agreement allows us to provide additional technical assistance to RCEER until it fully establishes itself and to work with RCEER and other partners in the region to enhance capacity to address energy sector problems facing the region. The most immediate topic of interest for the West Africa Mission remains the establishment of a natural gas market in Ghana, Benin, Togo and Nigeria in anticipation of the West Africa Gas Pipeline’s completion, which was originally scheduled for December 2006 but has been postponed until late 2007 and again until the first quarter of 2008. During the second half of 2005, the USAID Mission in Ghana used the TIPCEE project to develop a legal and regulatory framework for creating a natural gas market in Ghana. Dr. Asante, coordinator of RCEER, participated in the TIPCEE team. In the spring of 2006, the West Africa region started experiencing serious electricity shortages; the low level of water at Volta Dam in Ghana has been a main culprit. The completion of the WAGP and delivery of gas has gained further importance and urgency to provide opportunity to bring in gas-fired power generation to supply the grid. However, officials have been slow to finalize frameworks for maximizing the benefits of gas once it arrives. Accordingly, RCEER/CEE focus for FY06-FY07 has been on natural gas and gas-power linkages.

**Project Specific Activities**

Overall, there are five tasks in our cooperative agreement.

1. Continue work in Ghana with RCEER
2. Replicate the Ghana model elsewhere in Africa
3. Extend the Smart Development Initiative to Latin America
4. Conceptual and applied work to further define “Smart Development” variables and metrics
5. Capacity building for USAID

Tasks are not meant for simultaneous and continuous effort; guidance from USAID and Missions determine our focus. Accordingly, our work plan for FY06-FY07 focused primarily on Task 1, but had significant overlaps across other Tasks, in particular Tasks 2 and 4. We started FY06 with the following objectives:

- Constructive contribution to development of effective legal and regulatory framework for natural gas in Ghana
- Increased awareness of energy sector governance issues in Ghana
- Progress towards RCEER’s sustainability
- Progress in GDA (expanding our Ghanaian project through a look at regional natural gas market development based on our growing partnership with Gas Research Group at UNIPORT in Nigeria)
- Selection of the next LEP

Since late 2005, however, the regional considerations gained further support. Our GDA proposal led to USAID/WA’s desire to expand CEE/RCEER activities in collaboration with NARUC to the rest of West Africa, but in particular Nigeria. The next section of this report will address the key activities implemented during the eighth quarter of our cooperative agreement to achieve our original objectives listed above with an increased emphasis on development of a natural gas marketplace in West Africa and RCEER’s maturation into a regional center of excellence.
OUTPUT

• Capacity-building and experience transfer.
  
  o Regional Natural Gas Workshop. In the third quarter of 2007, CEE and its partners in the region (RCEER and KITE) held the second regional natural gas workshop. The event was held on July 9-13 in Accra. More than 100 delegates from the region attended the program. In addition to key agencies and companies from Ghana such as the EC, PURC, VRA, ECG, the Ministry, potential gas consumers in Tema, including TOR, the Nigerian National Petroleum Corporation (NNPC), Sotogaz (gas company in Togo), Bengaz (gas company in Benin), and Gaslink (a private gas distribution company in Lagos) also participated. The press release is sent to the Ghana News Agency, the Daily Graphic, the Ghanaian Times and Joy FM in Ghana. The communiqué is sent to the Minister for Energy in Ghana, the President of ECOWAS and the Secretary General of WAPP. We expect the Communiqué to be sent to officials in other countries as well; in fact some high level officials from Benin and Togo attended the workshop.

  o UNIPORT Workshop. On the first week of July, Dr. Foss and Dr. Gülen led the third annual Natural Gas Value Chain Workshop in Abuja, Nigeria. CEE-UT collaborated with the Gas Research Group at the University of Port Harcourt to deliver this five-day course, which was attended by over 40 industry professionals, regulators, industry representatives, and university colleagues. The course focused on value creation across natural gas and electric power value chains with a special emphasis on natural gas monetization options. This partnership between CEE-UT and UNIPORT is a serendipitous benefit of our activities in the region through the SDI program and our work with NNPC.

• Research, public education and outreach. An article based on the paper on the West African Gas Pipeline has been published in the Oil & Gas Journal on August 27. The paper titled “Net WAGP economic benefit requires Ghana development” was jointly written by Joseph Essandoh-Yeddu (Ghana's Energy Commission), Dr. Felix Asante (ISSER, University of Ghana) and CEE's Dr. Gurcan Gulen. The paper concluded that (i) natural gas will be a cleaner and cheaper alternative for many uses; (ii) developing the secondary market in Ghana can be done at low cost and quickly; (iii) allowing independent generation of electricity and resale in the wholesale market would quicken market development; and (iv) negotiations for buying more natural gas than foundation volumes need to start promptly.

General

CEE continues to house a page for the initiative within its web site to publicly disseminate developments: http://www.beg.utexas.edu/energyecon/IDA/Smart_Development/. Activity reports are available at this web site. Website statistics in the past quarter are provided below.

IMPACT

Achieved Impact

Key impacts achieved in this quarter were further capacity building in natural gas industry fundamentals in Ghana, Benin, Togo and Nigeria, increasing communication channels between professionals in these countries.
• **Increasing professional capacity and regional linkages.**
  
  o The second regional workshop took place in Accra in the first week of July. As expected, many delegates from the Abuja workshop attended this event but participation from Ghanaian entities including potential industrial gas users in Tema and several parliamentarians was quite significant. Participants were able to enhance their knowledge base, to strengthen existing communication channels and experience sharing among delegates from other countries. However, most importantly, with the initiative of Dr. Asante, coordinator of RCEER, and our colleagues at KITE, this workshop was targeted to come up with actionable policy suggestions to deal with the energy crisis by getting ready to receive gas and to develop working groups in each country to continue collaborative work on gas market as well as power sector issues. The suggestions have been communicated directly to decision-makers and the public via a press release and a communiqué. Building on the Abuja workshop in February, the working group concept offers a structure for somewhat formalizing emerging professional relationships among individuals and entities across the countries in the region.

  o Although the timing may be coincidental, we understand that the Ghanaian Cabinet approved the gas market regulations developed by EC shortly after the workshop. EC submitted the regulations to the Cabinet in early 2007. Another relevant public announcement was made by the VRA in late July regarding the installation of emergency generation capacity of 392 MWs. The participation of key industry players and especially of parliamentarians appears to have focused attention on gas and power issues.

  o The collaboration with KITE in putting together the workshops continues to be very productive. This was the second event planned by CEE & RCEER with KITE. It is rewarding to see the interaction between these organizations during such events. In organizing this program, RCEER and CEE also have reached out to the Ghana Chamber of Mines, Association of Ghana Industries as well as individual companies in Tema to solicit their input regarding the cost of electricity shortages and their readiness for natural gas. Presentations were made by representatives of some these companies but many more participated in discussions.

  o CEE has also assisted the Gas Research Center at UNIPORT with the third annual workshop in July 2007. Although this is not an activity directly funded through our USAID CA, we have been able to take advantage of connections established through this relationship for our USAID activities. Over 40 delegates have used the program to build their capacity. Represented organizations included NNPC (NAPIMS, NPDC), NGC-Warri, Shell Nigeria Gas, Chevron, NLNG, 1st Bank of Nigeria, and UNIPORT/PTDF. Although the program has now some reputation in Nigeria and can attract at least 25-30 participants, it needs a firmer administrative basis to secure its financial viability. We plan to work with our colleagues at UNIPORT and NNPC to secure this foundation.

• **Increasing international linkages.** CEE continued to work with various university colleagues in the region.

  o **University of Ibadan.** Dr. Adenkinju from University of Ibadan and his colleagues who formed the Nigerian chapter of the International Association for Energy Economics (IAEE) following our initial suggestion in October, are now gearing towards organizing an international IAEE conference in Nigeria.¹ Dr. Akintunde Iwayemi was in Houston during the week of September 17 to attend the

IAEE/USAEE conference and to discuss options for organizing the first IAEE regional conference in Africa in 2008. There are also plans to have the International Conference of the IAEE in Nigeria in 2012. CEE-UT staff are active in USAEE and IAEE and served as officers; we will help the Nigerian Chapter with next year’s conference preparations.

- *Catholic University of Angola.* Although not funded through the current agreement, CEE-UT has a partnership in Angola based on the LEP model of SDI with the Center for Investigative and Scientific Studies (CEIC) at the Catholic University of Angola (UCAN). The partners finished work on an energy report. An international conference “Energy in Angola,” the first of its kind in Angola, was held on September 27-28 in Luanda. CEE-UT benefited from its linkages around the continent both for the report and the conference. At the conference, presentations were given by speakers from Angola, South Africa, and Zambia. CEIC/UCAN has been able to raise interest among private sponsors for the conference (see agenda for a list of sponsors). CEE-UT and CEIC will continue working together towards developing an energy economics and management masters degree at the UCAN.

- *The University of Texas at Austin.* Finally, CEE continues to support the Africa initiative led by Jackson School of Geosciences (JSG) at UT-Austin to help develop human capacity in Africa on natural resource sciences and economics through university education and research. The first activity may be a lecture series in the region.

**Expected Impact**

- Increasing professional capacity and regional and international linkages.

  - Some of the delegates to the July workshop in Accra initiated discussions about forming an association of sorts for the gas industry to bring together emerging distribution companies and industrial users in Benin, Togo and Ghana with relatively more experienced counterparts from Nigeria and Côte D’Ivoire. If successful, this effort can create a group of influence for development of commercial frameworks that would attract investment and interest in the sector.

  - The IAEE chapter in Nigeria is expanding and appears to be quite proactive with their initiative to organize the first regional IAEE conference in Nigeria in 2008. CEE-UT will assist the Nigerian chapter with the organization of the 2008 regional conference and possibly the 2012 international conference in West Africa. These conferences will bring together the energy economics expertise in the region and elsewhere in Africa, attract outside experts and help expose some of the energy sector issues facing the region.

  - We are also hoping that, if the JSG initiative is successful, we will be able to increase resources available to build university and professional capacity in several countries in Africa in a shorter period of time. One of the first efforts in this direction could be a distinguished lecture series in the region.

  - CEE is launching a new capacity building program, “Executive Program: Commercial Practices for Oil and Gas Value Chains.” The goal for this course is to provide a more comprehensive understanding of oil and gas value chains to future commercial managers and younger professionals with less than a decade of experience. We have already received 5 nominations from NNPC to attend this course in December 2007. NNPC is a critical player in the region. The company is undergoing restructuring to become more commercially oriented and plays an important role in developing the domestic natural gas market in Nigeria and
ensuring supply for the WAGP. We hope to attract more key participants from the region to this program. More information about CEE’s new course is available on www.beg.utexas.edu/energyecon/new-era

- Mr. Joseph Essandoh-Yeddu (Ghana’s Energy Commission) has been working to finalize arrangements to return to Texas and work with BEG on the CO2 project started during his last visit and with CEE-UT on natural gas research focusing on the developments in West Africa in general and Ghana in particular. The latter work would build on the research recently published in the *Oil & Gas Journal*, and help Mr. Essandoh-Yeddu fulfill his PhD requirements.

- In Angola, CEE will continue to maintain the links with the CEIC and AEAF to build and expand energy economics and management skills for the energy sector professionals. Opportunities will be explored for cooperation between CEIC and RCEER and other partners currently involved in the grant activities.

- We hope that there will sufficient funding and university approval for the Energy Economics course developed by RCEER to start at the University of Ghana. Although there is no formal survey of students, judging from the level of interest shown by students to past RCEER activities, we suspect that the course will attract a respectable number of students. We also know of interest from other schools such as GIMPA to offer similar courses.

- **Increasing collaboration and support of industry professionals in RCEER activities.**

  - We expect to continue collaboration with KITE in putting together events and other activities.

- **Improved public understanding of natural gas industry fundamentals.** This expectation remains the same as in previous reports. The understanding of natural gas industry fundamentals remains low among the public, especially in Ghana, Togo and Benin. RCEER as well as professionals from the industry will continue with their efforts to provide educational publications, seminars and outreach activities. KITE can also play an important role in dissemination of basic information as they work in the communities. Publication of the *Guide to Natural Gas in West Africa* in French and in English and distribution in all four countries may also help expand the reach of critical information.

Work plan for fiscal year 2008 is currently under discussion.
Internet Statistics

| USAID Smart Development Initiative Pages - Internet Hits - Selected Pages | Nov-05 | Dec-05 | Jan-06 | Feb-06 | Mar-06 | Apr-06 | May-06 | Jun-06 | Jul-06 | Aug-06 | Sep-06 | Oct-06 | Nov-06 | Dec-06 | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | Jun-07 | Jul-07 | Aug-07 | Sep-07 | Total from Nov 2005 to Sep 27, 2007 |
| Guide to Electric Power in Ghana | 76 | 68 | 78 | 77 | 91 | 67 | 94 | 98 | 91 | 100 | 103 | 83 | 78 | 116 | 123 | 130 | 192 | 250 | 293 | 286 | 241 | 156 | 149 | 3034 |
| Energy Economics Syllabus | 18 | 17 | 16 | 14 | 24 | 18 | 18 | 19 | 10 | 12 | 11 | 7 | 12 | 15 | 14 | 16 | 14 | 18 | 15 | 17 | 25 | 19 | 15 | 24 | 14 | 238 |
| USAID - CEE Smart Development Initiative - One pager | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RCEER Article 071505 | 13 | 12 | 20 | 11 | 16 | 9 | 12 | 9 | 15 | 8 | 9 | 8 | 13 | 9 | 6 | 10 | 11 | 5 | 9 | 3 | 14 | 7 | 724 |
| RCEER Launching | 10 | 16 | 7 | 11 | 6 | 11 | 6 | 9 | 4 | 7 | 5 | 1 | 11 | 15 | 14 | 7 | 9 | 10 | 11 | 11 | 5 | 12 | 4 | 209 |
| RCEER Article 062405 | 9 | 8 | 6 | 9 | 9 | 11 | 6 | 9 | 3 | 7 | 6 | 2 | 3 | 14 | 17 | 11 | 6 | 14 | 8 | 14 | 13 | 13 | 6 | 205 |
| Minister Speech 071205 | 15 | 16 | 7 | 11 | 10 | 9 | 14 | 9 | 12 | 8 | 11 | 9 | 12 | 8 | 9 | 5 | 6 | 12 | 4 | 201 |
| RCEER Article 041005 | 5 | 4 | 6 | 10 | 4 | 6 | 4 | 8 | 4 | 7 | 3 | 4 | 5 | 9 | 11 | 5 | 8 | 9 | 8 | 5 | 7 | 11 | 5 | 138 |
| RCEER Article 041105 | 5 | 4 | 7 | 8 | 5 | 3 | 3 | 8 | 3 | 7 | 3 | 5 | 7 | 5 | 9 | 4 | 9 | 8 | 5 | 7 | 7 | 11 | 5 | 138 |
| RCEER Opening Article | 7 | 6 | 3 | 10 | 2 | 5 | 3 | 2 | 1 | 3 | 2 | 4 | 5 | 4 | 3 | 10 | 3 | 3 | 5 | 8 | 3 | 8 | 7 | 10 | 4 | 115 |
| RCEER Article 052005 | 4 | 3 | 3 | 9 | 2 | 2 | 4 | 5 | 3 | 4 | 3 | 3 | 6 | 3 | 13 | 3 | 4 | 5 | 4 | 7 | 5 | 11 | 6 | 112 |
| Programme EG July13 | 5 | 5 | 7 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 0 | 4 | 1 | 3 | 10 | 3 | 3 | 4 | 5 | 5 | 3 | 4 | 7 | 5 | 92 |
| Letter of appreciation from Joseph Essandoh-Yeddu | 2 | 2 | 3 | 8 | 1 | 2 | 4 | 3 | 2 | 0 | 5 | 1 | 3 | 3 | 4 | 2 | 2 | 4 | 0 | 6 | 5 | 5 | 3 | 1 | 70 |
| Other pages | 376 | 471 | 509 | 581 | 589 | 589 | 528 | 540 | 444 | 555 | 506 | 625 | 733 | 808 | 797 | 634 | 628 | 747 | 954 | 738 | 593 | 630 | 453 | 13584 |
| Total hits on USAID Grant portion of CEE website | 546 | 626 | 649 | 766 | 752 | 730 | 698 | 721 | 592 | 720 | 673 | 765 | 920 | 1037 | 1035 | 837 | 877 | 1113 | 936 | 1112 | 929 | 934 | 670 | 18638 |