

# The SUNGAS Project

## *Sustainable Utilisation of Nigeria's Gas and Renewable Energy Resources*

### PROJECT SUMMARY

<b>Location</b>	Rivers State, Bayelsa State, Niger Delta
<b>Launch</b>	April 2009
<b>Rationale</b>	Nigeria has vast oil and gas reserves and abundant renewable energy potential. Yet the country is suffering an energy crisis, which has a major impact on its ability to reduce poverty and achieve the MDGs. This project has been conceived to ensure access to modern energy services in the Niger Delta region of Nigeria.
<b>Objectives</b>	To catalyse the development of natural gas and renewable energy markets and sustainable community-based energy facilities within and beyond target communities and the target states, through policy reform and by demonstrating that alternative community-based energy facilities can provide sufficient power for meeting rural and urban community needs.
<b>Partners</b>	International Institute for Environment and Development, London, UK Niger Delta Wetlands Centre, Bayelsa State, Nigeria Living Earth Foundation, London, UK
<b>Expected results</b>	<ul style="list-style-type: none"><li>(a) Reformed policy framework and more favourable investment climate to promote the sustainable utilisation of flared gas for community-based electricity provision and the development of community-based energy service provision based on renewable energy sources.</li><li>(b) One community-based demonstration project for utilisation of flared gas to generate electricity for household and enterprise consumption and to support public services in the target community.</li><li>(c) Up to five community-based renewable energy facilities based on scaling up or replication of successful pilot initiatives to satisfy the energy service requirements of target communities.</li><li>(d) Institutions to enable work to continue beyond the life of the project, including a multi-stakeholder Energy Policy Forum, a civil society coalition to address energy policy, Community Energy Councils in target communities.</li></ul>



**Main activities**

- Stakeholder engagement programme around energy policy reform, including establishment of a multi-stakeholder Energy Policy Forum
- Advocacy and communications programme, including civil society coalition building for advocacy on gas utilisation and other energy policy
- Community-based energy needs assessments
- Community outreach and capacity building (including technical skills)
- Capacity building for State Governments and Local Government Associations (LGA) for enhanced energy service delivery
- Establishment of Community Energy Councils
- Implementation of scaled-up and/or replicated community-based renewable energy projects, with establishment of community-led institutions for managing the facilities
- Procurement, installation and commissioning of a gas plant to utilise flared gas to provide electricity to the local community, with establishment of a community-based utility
- Community-to-community learning and knowledge sharing
- Energy partnership recommendations (public-private partnerships for ongoing support of community-based energy service delivery)
- Research component: policy-oriented research; documentation of project experience as case studies
- Ongoing, participatory monitoring and evaluation process feeding into lesson learning processes
- Broad dissemination of case study materials and lessons learned

**Key research areas**

- Energy and low-carbon development
- Power sector reform
- Natural gas utilisation
- Renewable energy investment and opportunities
- Biomass energy options
- Energy for better public service delivery
- Energy for job creation

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## 1) Rationale

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Nigeria has vast oil and gas reserves and abundant renewable energy potential. Yet the country is suffering an energy crisis, which has a major impact on its ability to reduce poverty and achieve the MDGs. Fossil fuels made up 94% of exports from Nigeria to the EU in 2006; only a small fraction of this is available for domestic uses. Due to a lack of gas utilisation infrastructure, Nigeria flares about 2.6 billion cubic feet of gas per day (12.5% of all globally flared gas). Annually, this is equivalent to 30% of the EU's annual gas consumption.

About 100 million Nigerians (70% of the population) have no access to electricity and three-quarters of the population still use fuel wood for cooking, with all the associated health risks. Nigeria's energy crisis limits opportunities to bring its citizens out of poverty. Poverty is widespread among Nigeria's 140 million inhabitants. In 1980, only 28% of the population was considered poor. Yet today 71% live on less than a dollar a day, while 92% live on less than two dollars a day. Furthermore, the population is expanding at a rate of 7% per year.

Development experts agree that ensuring access to modern energy services is critical to achieving virtually all of the MDGs. This includes provision of electricity to clinics and schools; household lighting to enable evening study at home and adult education in the evenings; clean cooking fuel to reduce indoor air pollution and the need for fuel wood; power to pump clean drinking water in villages (reducing the risk of waterborne diseases and time taken to gather water from distant sources).

Reliable, affordable energy services can enhance opportunities for local farmers, manufacturers and crafts businesses to develop. For example, power is required to pump irrigation water; for food drying and processing; and to light small trading kiosks in the evening, and to power the equipment of small-scale operators such as welders, hairdressers and cold storage providers.

The experience of sustainable energy service delivery in developing countries has been mixed. Many of the lessons of the 1990s have been documented by the International Finance Corporation, UNDP, the Global Environment Facility and DfID.<sup>1</sup> Key lessons include the importance of assessing community energy needs from the outset; establishing community ownership over initiatives; developing appropriate financial mechanisms, including payment systems; and developing partnerships between industry and local government to deliver energy services. It is essential to have supportive policy frameworks in place, and to integrate planning with existing policy initiatives, regional and sectoral plans. A cross-sector approach is required, with multi-stakeholder dialogue involving government, large and small business entities, donors and civil society.

Our approach offers a combination of policy advocacy, capacity building (for communities, government and civil society), and support for a gas utilisation demonstration project and scaling up/replication of renewable energy initiatives. The policy advocacy and capacity building elements of this proposal will provide a strong foundation for the other activities. The practical components of the project will serve to catalyse energy markets and investment in community-based energy provision by demonstrating that such approaches can be affordable and sustainable, can generate healthy business opportunities and can stimulate economic growth in communities.

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<sup>1</sup> See for example: Magradze, N., Miller, A. and H. Simpson (2007) *Selling Solar: Lessons from More than a Decade of IFC's Experience*, Washington: International Finance Corporation; Krause, M. and S. Nordstrom (2004) *Solar Photovoltaics in Africa: Experiences with Financing and Delivery Models*, New York: UNDP; and Department for International Development (2002) *Energy for the Poor*, London: DfID.

## 2) Expected results

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The project aims for reform of the policy landscape to enable the sustainable utilisation of flared gas for community-based electricity provision and the development of community-based energy service provision based on renewable energy sources. We aim to enhance the capacity of the public sector to delivery energy service provision – and indirectly to enhance the delivery of other public services, including health, education and water.

We aim to enhance the investment climate to encourage private and public sector investment in sustainable community-based energy provision. The gas utilisation demonstration project and renewable energy initiatives should demonstrate the feasibility and desirability of such projects. We envisage that improved energy service provision will also stimulate local economic development, by generating new opportunities for small and medium enterprise development in agriculture, small scale manufacturing, trade (e.g. via lighting for kiosks) and local services (e.g. hairdressing).

The project seeks to establish local institutions that will continue to promote reform and development beyond the life of the project, including a multi-stakeholder Energy Policy Forum, an NGO coalition to address energy policy, and Community Energy Councils in target communities. We aim to encourage multi-stakeholder dialogue with a view to facilitating public-private partnerships for sustainable energy provision, and we aim to facilitate establishment of such partnerships through our energy partnership recommendations. We also seek to encourage public and private investors to provide finance for ongoing development of sustainable energy service delivery.

There is a strong focus throughout the project on lesson learning, exchange and dissemination. Models established by the project (e.g. community-based institutions to manage energy service facilities; Community Energy Councils, multi-stakeholder dialogues) will be replicable in other communities and states. The experiences of the project will be written up and disseminated as case studies.

### **EXPECTED OUTPUTS**

- **Preliminary policy analysis report** with recommendations for policy reform, used as a basis for policy advocacy by project partners, and for guidance by various levels of government
- **An Energy Policy Forum** established and continuing beyond the life of the project
- **A reformed policy landscape** to support community-based energy provision
- **Regular policy briefings** (up to six per year) and 2-3 policy-related Opinion Papers
- **One gas-to-power plant** (subject to feasibility approval by Technical Feasibility and Assurance Panel) with a community-owned utility for delivery of electricity
- **Up to five scaled up or replicated community-based renewable energy initiatives**, with community-led institutions to own and manage facilities beyond the life of the project
- **A series of radio programmes** relating to project experience
- **Up to five tool-kits** (e.g. relating to participatory techniques; community capacity building; monitoring and evaluation; financial management), adapted to local contexts, used and modified in the course of the project, and made available for future work
- **Three annual project review reports** and **one final summary project report**
- **Publication of project case studies** and lessons learned
- **A video** documenting the experiences of the project

### 3) Sustainability

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At a basic project level, sustainability involves embedding monitoring and evaluation in all project activities from the earliest stages. Overall, we aim to catalyse long-term partnerships between stakeholders and build ownership and responsibility for the long-term running of initiatives among representatives of communities, local business and local authorities.

**Environmental and social sustainability:** Environmental and social sustainability are embedded in the overall goal of the project, which is to promote low-carbon energy provision in poor/isolated communities. Improved energy service provision will stimulate local economic development, by generating new opportunities for small and medium enterprise development in agriculture, small scale manufacturing, trade (e.g. via lighting for kiosks) and local services (e.g. hairdressing). Provision of sustainable, affordable energy services will enhance educational and health prospects for local populations. We will ensure that impact, risk and needs assessments are conducted at appropriate stages in project development in order to minimize negative environmental and social impacts from the project and to maximize opportunities for creating environmental and social benefits.

**Financial and economic sustainability:** We seek to enhance the investment climate to encourage private and public sector investment in sustainable community-based energy provision. The gas utilisation demonstration project and renewable energy initiatives should demonstrate the feasibility and desirability of such projects. We will seek funding and promote partnerships for further activities that will allow the project partners and beneficiaries to benefit beyond the life of this project. This will include engagement with the private sector and the government (e.g. exploring opportunities for LGAs to use project funds to leverage funding from the federal government for local energy provision). We will also build on our existing relations with the World Bank and international oil companies to secure financial and in-kind support for this initiative. We will explore carbon finance opportunities (e.g. the World Bank Community Development Carbon Fund).

**Institutional:** We aim to encourage multi-stakeholder dialogue with a view to facilitating public-private partnerships for sustainable energy provision. We seek to establish Community Energy Councils and other local institutions that will continue to promote reform and development beyond the life of the project. These models will be replicable in other communities and states. We aim to establish a multi-stakeholder Energy Policy Forum and an NGO coalition to address energy policy. We will support capacity building of existing institutions (e.g. LGAs) and new institutions that will be set up as a result of project activities (e.g. CECs). We aim to enhance the capacity of the public sector to delivery energy service provision – and indirectly the delivery of other public services (e.g. health, education, water).

**Policy level:** The project aims for reform of the policy landscape to enable the sustainable utilisation of flared gas for community-based electricity provision and the development of community-based energy service provision based on renewable energy. The Energy Policy Forum will enable policy dialogue to continue beyond the life of the project.

**Communications and lesson learning:** There is a strong focus on lesson learning, exchange and dissemination. Project experiences will be monitored, evaluated and brought together in the form of case studies and ‘lessons learned’ for broad dissemination. The advocacy and communications programme is designed to bring about positive change in the form of a supportive policy environment, greater awareness and greater confidence in sustainable energy options; these are impacts that will resonate beyond the life of the project. Community-to-community learning will take place: in the initial stages of the project (visiting existing energy initiatives); throughout the project at key points; and towards the end of the project to promote knowledge building for replication and extension.