LIVING EARTH FOUNDATION
GAS TO POWER PROJECT

Background

To the average Niger Deltan gas flaring is the most visible and insidious representation of the oil industry. Nigeria has about 180 trillion cubic feet of proven gas reserves (the seventh largest in the world). It currently exports about 3 billion cubic ft. per day and flares about 2.5 billion cubic ft. per day (equal to 30% of the entire EU's annual gas consumption) due to lack of infrastructure to make use of the gas more productively. Only about 0.5 billion cubic feet per day is supplied to the domestic power sector while approximately 70% of the population has no access to electricity or modern energy services. Harnessing gas from the flares to meet local energy needs is critical to development in the Niger Delta.

Project Description

The 'gas to power' demonstration project will utilise associated gas, either from a flow station or an oil well and, through a micro turbine, generate electricity for domestic and small business consumption. The project will deploy a 0.5 MW gas turbine to produce and distribute electricity to about 3,000 households and 500 small businesses as well as 5 health centres and 6 schools. The project design has a strong community ownership element in-built: the entire assets and operations are to be managed and maintained by a community-based utility company that will be owned by the community. The siting of the project will be preceded by a technical feasibility and economic viability assessment since the project aims at full cost recovery. In addition to electricity generation, the project has scope for the incorporation of other components such as 'gas to liquid' and 'gas to fertiliser'. These add-ons will operate on a fully commercial basis.

Innovation

This is the first time in Nigeria that a community will generate its own power from a hi-tech micro turbine and not heavily polluting and unsustainable diesel generators. The scale of the project makes it replicable in other parts of the Niger Delta as a sustainable local solution to domestic and industrial energy needs.

Impact

A reliable affordable power supply will increase the efficiency of small-scale enterprises, increasing both their production and turnover. Domestic electricity will improve quality of life for community members and the benefits of a reliable electricity supply to local schools and clinics are enormous. On Bonny Island, the community-owned utility company has demonstrated the positive correlation between a reliable power supply and the ability of local health centres to perform critical life saving operations without which referrals to the urban centres would have been required. All these factors will contribute to a reduction of poverty in the target community.

As a standalone project, this will have little or no impact on flares reduction, but its value is as a demonstration: a combination of these projects in various sizes will provide a sustainable model for increased domestic utilisation of gas, which is consistent with the Federal Government policy, and also, strike a critical blow to reduce flares.

Significantly, the project will help to give communities a real stake in oil production in the region. Seeing a clear benefit from gas and having control of their own energy supply will do much to remove the discontent which has fuelled sympathy for armed militants in the Delta.

Benefits to Project Partners

1. Provides an indirect route to raising the local content within the oil and gas industry in Nigeria.
2. The gas-intake to feed the plant will come from the assets of an IOC and this provides a strong incentive to the local community to protect the asset in order to maintain an un-interrupted power supply.
3. A shift in responsibility and cost savings in the current provision of electricity through diesel-powered generators to "host" communities by IOCs.
4. A demonstration of sustainable solution to gas flaring in the Niger Delta, which tackles frontally this huge reputational issue.
5. Provides an approach to responding to the new policy of the FGN that places emphasis o increased domestic utilisation of gas as opposed to gas exports.
6. Strong possibility of obtaining carbon credits for the project under the voluntary emission reduction mechanism of the Kyoto protocol.

Project Funding

US$ 2 million has been committed to the project by the European Commission. A further US$ 1 million is required before the project can go ahead.