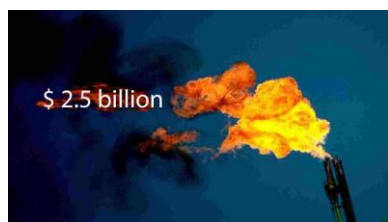


## NIGERIA'S GAS – WEALTH FOR ALL ?

Nigeria's gas is of high quality. It's called **SWEET GAS** because it contains 0% of sulphur and is rich in liquids. Nigeria's gas reserves are the 7<sup>th</sup> largest in the world and the largest in Africa with an estimated 187 trillion cubic feet (tcf) of proven gas reserves. Unproven reserves might be as much as 600 tcf. 40 per cent of Nigeria's gas is **ASSOCIATED GAS** as it

comes out of the ground together with the oil. Nigeria has been burning



much of this gas directly at the oil wells, thereby wasting 11%- 45% of all associated gas since oil exploration began in the 1950s. The amount of gas flared would fetch roughly \$2.5 billion each year.

At global level, the energy landscape is shifting drastically, and this affects Nigeria's oil and gas exports. Industrialised nations want to become **ENERGY INDEPENDENT** and are reducing energy imports. America now produces more oil than Saudi Arabia because of its aggressive exploitation of [shale gas](#). America used to be the no.1 destination of Nigerian oil until 2012, but now exports to the States make up only 2% of all Nigerian oil exports. Europe is developing its Renewable Energy potentials. In [Germany](#), 30% of electricity comes from solar, wind, hydro and biomass. But Europe is interested in Nigeria's gas as a buffer against the uncertainties regarding Russia's gas imports and wants to lay a **GAS PIPELINE** through the [Sahara to Algeria](#). All of this has profound effects on Nigerian gas exports and on the availability of gas for domestic consumption.

Nigerian policies fix domestic gas prices at low and **UNPROFITABLE LEVELS**. This means that gas producing companies have so far preferred to export Liquefied Natural Gas (LNG). If the gas-to-power revolution is to become reality, Nigeria needs a lot more gas on the domestic market. Currently, the Nigerian gas-to-electricity sector has about 1,000 km of pipelines. For an electricity revolution based entirely on gas, [Nigeria needs](#) about **10,000km of GAS PIPELINES**. At about \$1.2m per kilometer of overland pipeline, this will come at a huge cost.

Nigeria can produce about **40,000 MW** of electricity from all of its proven gas reserves, **FOR APPROXIMATELY 60 YEARS**. Obviously, the more you use, the faster you finish reserves, but new reserves might be found. The 60-year figure is based on a daily production rate of 8.5 billion cubic feet (bcf). The 40,000 MW are very much needed, but they won't be enough, as the Energy Commission of Nigeria has calculated a power need of 192,000 MW for the year 2030. Where will this electricity come from? Besides the gas, Nigeria will need solar, wind, hydro and biomass to generate enough power. Plans for these Renewable Energies must be reinforced **TODAY** in order to work **TOMORROW**.

### Nigeria's Power

Installed capacity 2014: 8,000 MW

Fed into the grid: 4,000 MW

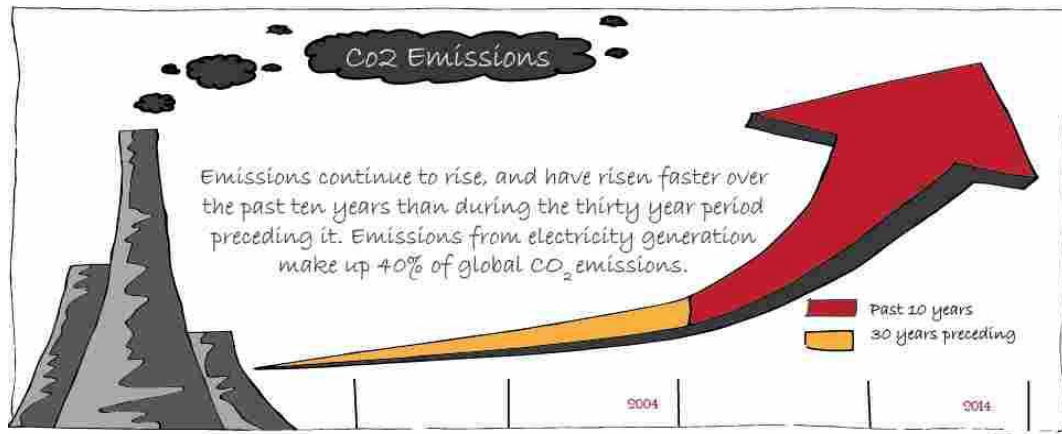
68% of electricity produced from gas

Biggest gas power stations:

Egbin, Lagos State: 1,200 MW

Afam, Rivers State: 650 MW

Olorunsogo, Ogun State: 675 MW



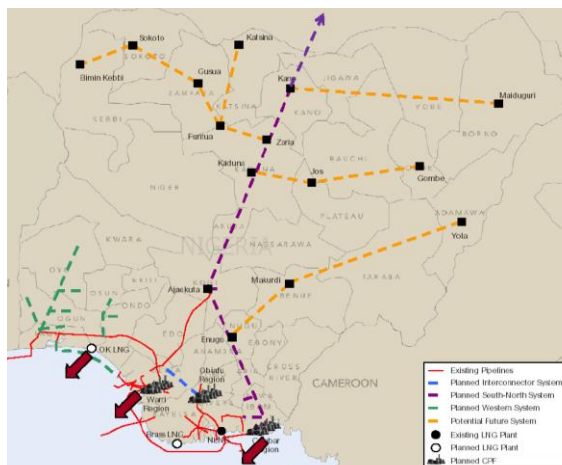
publicly available document is a [PowerPoint Presentation](#) which proposes a grid of gas pipelines.

Gas is **CLEANER THAN OIL**, in terms of electricity generation. But it emits CO<sub>2</sub>, whether the gas is used in power plants, in cars or for cooking. CO<sub>2</sub> contributes majorly to global warming, which exacerbates desertification, flooding and other natural disasters and poses a serious threat to the Nigerian economy and her people.

International oil companies are already calculating [CO<sub>2</sub> penalty charges](#) into their project development now, because they expect that CO<sub>2</sub> emissions will soon be penalized by an international agreement. The emissions from gas will qualify for emission penalties in the same way, because gas is a fossil fuel just like oil.

### THE COST OF GAS

The Nigerian Gas Master Plan (or Gas Revolution) is often quoted, but it does not have the status of an official policy. The only

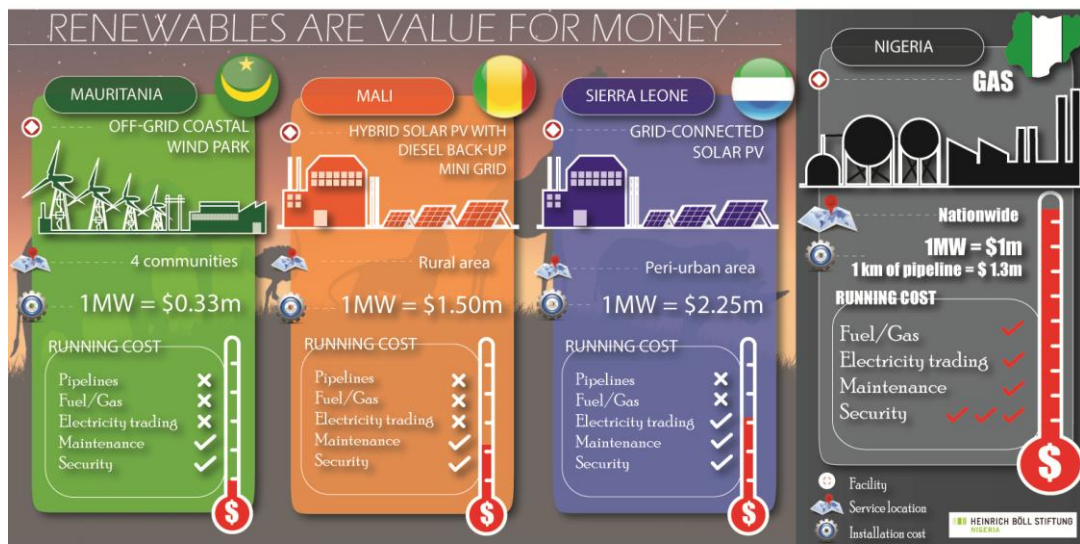


Western System: already in existence with 600km of pipelines; Interconnector Systems; South – North System: to be completed by 2018, bringing the initial pipeline system to 2,500 km. Three central gas gathering & processing facility systems are planned in Warri/Forcados area, North Port Harcourt area and Akwa-Ibom/Calabar area.

How much gas does Nigeria produce? **WHAT'S THE COST** of the gas infrastructure? There is no published government position on the cost of the Gas Master Plan, and statements differ. According to the Chairwoman of the Senate Committee on Gas Resources, [\\$30m in infrastructure](#) is needed to achieve Nigeria's aim of producing 3.4 billion cubic feet (bcf) of gas daily by 2015. But the Petroleum Minister says that Nigeria is already producing 4 bcf and wants to [triple this volume](#) by 2020.

**WHO WILL PAY** for the gas pipelines and other infrastructure? Everyone agrees that the amounts are huge, so gas infrastructure projects do not make good PPPs. There is no public government document that summarises the infrastructure being built. What is the plan?

Because of the huge infrastructure cost, a Megawatt produced from gas could quickly become more expensive than a MW from renewable energies:



## WHAT IS NEEDED

- Nigerians need electricity that won't run out. Gas is one step on the way, but it's not the overall goal. Nigeria needs a 50-year energy policy to channel investments to where Nigerians will benefit most. This policy should address the challenges relating to oil, gas and renewable energies.
- Gas should be used strategically, and must be complemented by other sources of energy. Where is the public debate about these issues: Should gas be used for industrial parks, whilst renewable energies feed communities, cottage industries and households? Beneficiaries could contribute to the initial investment cost.
- Instead of one big and expensive system of gas pipelines, Nigeria needs a smart mix of the national grid and many off-grid solutions. The off-grid solutions could be powered by renewable energies and by natural gas.
- Gas flaring should stop immediately.
- With or without the Petroleum Industry Bill, there should be open access to gas ownership, pipeline transmission and distribution. In line with NEITI standards,

government and gas companies must make information available, wellhead by wellhead, and source by source.

- Renewable energies are the future: already, 22% of global electricity comes from renewables such as solar, wind and biomass. Solar and wind will not attract CO2 penalties in the future as they have no emissions. Local content is much higher with Renewables.
- Renewables can reduce corruption: Where communities own their electricity generation from renewable sources, they can control the contracts, payments and maintenance themselves, either through community cooperatives or through the Local Government.

