

RENEWABLE ENERGIES – POWER FOR ALL

Nigeria will need almost **200,000 MW** in 2030 (as calculated by the Energy Commission of Nigeria). Where will this electricity come from? Besides the gas, Nigeria will need solar, wind, hydro and biomass to generate enough power.

Most government plans – if they are published at all – assume that the additional electricity will be fed into the national grid. However, currently the grid starts collapsing at 5,500 MW, and grid expansion is a costly and long-term project. There is no comprehensive information on how the grid expansion will be financed, and the contracts for the newly privatised GenCos and DisCos are not publicly available. Government has promised to improve the transmission lines (which are still owned by government), but has government obliged the DisCos to lay new cables and connect more households? **MORE THAN 80%** of Nigerian households do not have access to electricity from the national grid (NERC). What is the grid expansion plan, state by state, LGA by LGA, year by year?

Using renewable energy sources, communities can build their **OWN MINI GRIDS** within 3 to 12 months. The future of electricity is [off-grid](#)



and millions of Nigerian communities have the assets they need to become energy independent: sun, wind, water or waste. With low interest loans to communities, custom waivers for the importation of Renewables equipment and by taking LGAs along, communities can own their [mini grids](#).

RENEWABLES HAVE BECOME AFFORDABLE

as prices for solar equipments have fallen by 80%. Small hydro turbines come cheaper than solar: UNIDO has calculated that a community of about 2,250 people needs to invest N200m to get a 150kW installation.

After such a one-off investment, the turbine would run for the next 50 years – and the water is free of charge. If everyone in this community paid only N 500

per month to PHCN or their DisCo, their combined bills over 50 years would amount to N 675 million.

Renewable Power

150kW from Small Hydro

2,250 people

Installation cost: **N 200m**

Price increases: none.

Operational period: 50 years

DisCo Power

2,250 people

Installation cost: none

Price increases: very likely

N 500/month paid to DisCo

Cost over 50 years: **N 675m**

In Ofetebe community in Edo State, a solar mini-grid produces 4 kW to power a community borehole, a clinic, 30 households, a barber shop and relaxation spots like a video parlour. Installed for N 4.8m, the mini grid will last for 30 years: that's an investment of N500 per month per household. The community will have light every day, 365 days per year.

Jigawa State could have **SAVED MORE THAN N 12 BILLION**

if the state had [invested in solar irrigation pumps](#) rather than the usual diesel powered pumps in their 2010 annual budget. Although the solar pumps would have cost more in the first place, they would have incurred next-to-zero running cost and over ten years, the savings would have amounted to N12bn.

Africa's onshore wind resources are in the order of 1750 GW, far more than total African demand for the foreseeable future.

International Renewable Energy Agency

RENEWABLES CREATE JOBS [more than fossil energies](#) do. The oil industry has created less than [50,000 jobs](#) in Nigeria. With Nigeria's high potential in renewable energies, the job prospects are limitless: Imagine jobs in importation, construction, maintenance of renewable energy power systems... Imagine all-year irrigation, food processing, rural clinics with 24-hour refrigeration, thousands of barber shops and schools with light. In Germany, 400,000 jobs in the renewable energy sector compare with less than 200,000 jobs in the conventional energy sector. Nigeria can create many more jobs than Germany, where solar radiation is as low as in Alaska.

RENEWABLES ARE ON THE RISE - already, renewable energy sources like solar, wind, hydro and biomass are producing 22% of the world's electricity. but the remaining 78%, which are produced from fossil fuels such as oil, gas and coal, contribute massively to global warming. This affects Nigerians in form of increased [desertification](#), [flooding](#) and [gulley erosion](#).

Ghana is building Africa's largest solar photovoltaic (PV) power plant with \$400m, which will produce 155 MW (the Nzema Solar Project). Kenya is planning for enough solar power to provide more than half of the country's electricity by 2016. Construction of the plants is expected to cost \$1.2bn. For the same amount, Nigeria could build 1,000km of gas pipelines – but that would constitute only 10% of the [gas pipelines](#) that the country needs. And that's only the pipelines... the capturing, transfer and power stations would cost extra.

CARBON LOCK IN - before Nigeria locks its energy infrastructure into a 30-year fix on fossil fuels, there should be a debate in parliament and in public whether renewables aren't the better option for communities, cottage industries and households? Whilst piping the gas mainly to industrial areas and parks? A new Draft Renewable Energy Policy acknowledges



the need for off-grid systems and proposes that renewables should provide 10% of electricity in 2015. However, the draft policy is neither endorsed nor published.

NORTHERN NIGERIA POWER EXPORTS?

As climate change increases temperatures and desertification in the north of Nigeria, the



clear skies and intense solar radiation constitute an asset for solar technology. [Concentrated Solar Power](#) could generate thousands of MW here. Harnessing the desert sun has great attraction for big [business worldwide](#).

WHAT'S THE CATCH? There are two areas where caution must be applied:

LAND GRABBING to build large-scale solar or wind parks has become a feature of the much criticised Green Economy in countries such as Mexico. Communities must be consulted before their land is used for any power project. Livestock grazing is unaffected by solar and wind parks, but farming would not be possible in a large solar park.



THE BIOFUEL TRAP – where large swathes of land are used to grow bio fuel crops such as sugarcane or jatropha, food production is cut down. In a country with malnutrition this could be irresponsible. Where the bio fuel crops are exported, for example to the EU which has high bio fuel targets to reduce CO2 emissions in transport, the damage could be triple: low food production, degrading soils because of intensive agriculture and export of produce and profits. Nigeria has various [bio fuel projects](#) from Adamawa to Kwara to Ekiti States: each one needs thorough checking and validation.

WASTE TO POWER is a potential win-win solution, where real waste is turned into electricity. Real waste is what cannot be eaten or consumed, recycled or reused. Rubbish dumps are large emitters of methane gas: turning [methane into electricity](#) is of triple benefit: reduction of dangerous greenhouse gas emissions and of waste volumes, and providing power for people.



RENEWABLES vs CORRUPTION - Nigeria is not reaping enough benefits of her most important assets, i.e. the abundant renewable sources of energy. Is that because politicians rather want to believe in mega

solutions like gas pipelines networks? In reality, 'small-small solutions' in the form of decentralised renewable energy make a lot of business and social sense. The nature of these deals would also reduce corruption, as communities would own and control their power.

WHAT IS NEEDED

- Tax holidays and low interest loans for small and medium scale renewable energy schemes and operators (Tax Pioneer Status, just like the early GSM companies were granted)
- Customs waivers for importation of renewable energy equipments
- Local Governments to assess their renewable energy landscape and potentials, and discuss concrete plans for off-grid solutions and their funding with communities
- The Standards Organisation of Nigeria to ensure that only high quality renewable products enter Nigeria, to counter the false impression that 'solar does not work'
- Federal Government to develop an integrated energy plan for the next 50 years, working towards 80 to 100% renewable energy by 2050
- A green Infrastructure Masterplan – at the moment, the NIIMP says completely different things about Nigeria's future energy infrastructure than the draft Renewable Energy Policy. Since neither document has been made public, candidates, parties and politicians need to explain what energy infrastructure they envisage and who will pay for it.

