



The proposed Lamu Coal Plant will cause irreparable environmental and economic harm to the region, is not economical, and will cause the price of electricity to increase.

BACKGROUND

- The Government of Kenya has proposed a 1,050 Megawatt (MW) coal plant to be built in Kwasasi, Lamu County 20km from Lamu Town.
- The project will be operated by Amu Power – a special purpose joint venture of two Kenyan companies: Gulf Energy and Centum.
- Residents of Lamu County are opposed to the plant due to the negative economic, environmental, and health impacts they will endure as a result of burning coal for electricity in Lamu.

LAMU COAL POWER STATION WILL CAUSE IRREPARABLE DAMAGE

- **To human health:**
 - Burning coal releases toxic particulate matter into the air. These particulates cause asthma, bronchitis, cardiac disease, and cancer. ⁱ
- **To fish, crops, and wildlife:**
 - Burning coal requires millions of gallons of water to keep the plant cool. After the water is used, the now-hot water will be released back into the ocean around Lamu. The increased temperature will harm the fish in the water and destroy the livelihood of the fishermen and the fishing industry. ⁱⁱ
 - The particulate matter also creates acid rain, which can ruin water systems and crops, plants, and trees, and affect fish and wildlife. The nitrogen in acid rain kills fish and shellfish. ⁱⁱⁱ
- **And to Lamu Town:**
 - The particles will cause corrosion and other damage to the historic buildings and structures. ^{iv}
 - Burning coal creates hazy pollution that limits visibility and could reduce tourism to Lamu. ^v

THE PLANT WILL CAUSE THE PRICE OF ELECTRICITY TO INCREASE

The price of electricity is directly related to the price of coal, the cost of building the plant and its infrastructure, and the capacity of the plant that is utilized. The Kenyan Government utilized historically low coal prices in its calculations and grossly underestimated the price of electricity from the Lamu Coal Plant.

1. Amu Power based its electricity price on coal costing USD \$50/ton and the plant operating at 85% capacity. At USD \$50/ton, electricity from the plant would cost USD 7¢ per kilowatt hour. ^{vi}
 - October 2017, the price of coal was USD \$85/ton and USD \$90 delivered in Kenya. ^{vii}
 - The price of coal fluctuates. The average price of 1 ton of Australian coal in 2014 (the year of the government calculation) was USD \$81 (\$86 delivered). In the past six years, the price of coal has been as high as USD \$135/ton. ^{viii}
2. Amu Power's USD 7¢/kWh did not include the marginal rate to repay the loans of the full cost of the plant.
 - The cost of building transmission lines to get the electricity to people in Nairobi and a train to get the coal from Kitui increases the cost of the electricity from the plant which was not included in Amu Power's calculation.
 - Once this is accounted for, electricity, with the plant running at 85% capacity, will cost USD 11.7¢/kWh. This is the same price as electricity from wind and more expensive than all other sources of electricity in Kenya except for nuclear and hydro from High Grand Falls. ^{ix}



3. The price of electricity is related to the Plant Load Factor (the percentage of a plant's capacity that is used).
 - Amu Power based its price on the plant running at 85% capacity.
 - The average utilization for a coal-fired plant in China is 49%; 55% in the United States; and 65% in India.^x If the plant operates at the international average (56%) it will not generate enough electricity to pay back Amu Power's debt and rates will increase to cover the balance.
4. The plant is not needed for Kenya's energy security, yet Kenyans will still have to pay.
 - The Kenya government overestimated the growth rate of electricity use at 15% (the historical average is 6%) and a peak demand in 2030 of 10,000-15,000MW. Lahmeyer International, an independent engineering consultancy, projects electricity demand in Kenya to grow at 8% annually through 2030 and the peak demand for electricity in Kenya in 2030 to be 4,700MW.^{xi}
 - According to the agreement between the Government of Kenya and the contractor, Kenya Power must pay for the power produced by Amu Power whether or not it is used. These costs will be passed on to customers in the form of rate increases.

THE PLANT IS UNNECESSARY FOR KENYA'S ENERGY SECURITY

There is no need to add a coal plant in order for all Kenyans to have electricity.

- The former head of the Kenya Energy Regulatory Commission found that Kenya can meet peak 2030 demand with existing resources and available renewable energy resources – including hydro imports from Ethiopia – and currently untapped geothermal and wind capacity.
- Wind and sunshine will always be free, and the price of wind and solar technology is rapidly declining. The International Renewable Energy Agency calculates that in 2025 the global average price for Offshore Wind will be USD 11¢/kWh; Solar PV USD 6¢/kWh; and Onshore Wind USD 5¢/kWh.^{xii}

**Proper procedures have not been followed and proper due diligence on impacts of and alternatives to coal were not conducted prior to plant approvals.
Please visit deCOALonize.org for additional information.**

#deCOALonize is a collaboration among environmental and social justice advocates who want Kenya to have a green economy powered by sustainable and clean renewable energy.

Notes:

- i http://www.catf.us/resources/publications/files/The_Toll_from_Coal.pdf accessed 23 November 2017
- ii <http://www.ucsusa.org/clean-energy/energy-and-water-use/water-energy-electricity-cooling-power-plant#.WMje1xKGOCQ> accessed 23 November 2017
- iii <https://www.epa.gov/acidrain/effects-acid-rain> accessed 23 November 2017
- iv *ibid*
- v *ibid*
- vi Hindpal Singh Jabbal, 'Annexure 1: Objection to the Granting of a License by the Energy Regulatory Commission for the 3x350MW Coal Plant at Lamu', Save Lamu & Ors V National Environment Management Authority & Anor (2016) NET Appeal 196/2016
- vii <http://www.indexmundi.com/commodities/?commodity=coal-south-african> accessed 23 November 2017
- viii <http://www.indexmundi.com/Commodities/?commodity=coal-australian&months=60%20and%20communication%20with%20Institute%20for%20Energy%20Economics%20and%20Financial%20Analysis> accessed 23 November 2017 and communication with Institute for Energy Economics and Financial Analysis
- ix Hindpal Singh Jabbal (n 2)
- x <http://energypost.eu/coal-power-capacity-keeps-growing-utilisation-going/> accessed 23 November 2017
- xi Lahmeyer International, Development of a Power Generation and Transmission Master Plan, Kenya, 2015-2035 (Lahmeyer International GmbH, October 2016) 2.
- xii <http://ieefa.org/ieefa-report-three-timely-takeaways-2016-global-energy-transformation/> accessed 23 November 2017