

The True Cost of Coal in South Africa: paying the price of coal addiction



Coal in South Africa

- Massive coal dependency > 90% of SA electricity comes from coal. While < 1% comes from renewables
- Eskom (state utility): coal is cheap and therefore will be used for the foreseeable future
- Building Medupi and Kusile coal-fired power stations to 'keep the lights on' (they will be two of the biggest coal-fired power stations in the world – 4800 MW each)
- Centralised coal has failed to deliver electricity to over 2.5 million households
- Burning coal is one of the most destructive practices on the planet
- **'hidden costs'/negative externalities** which are not reflected in the price of coal (most significant impacts caused by burning/mining coal not reflected in its price per ton, or the cost of a kWh of electricity).



The True Cost of Coal: the case of Kusile

- Independent research commissioned by the University of Pretoria (Dept. of Economics)

“What is the externality cost of coal-fired power generation?” (Kusile)

- Climate change (price per ton of CO₂ – annual damage cost)
- Health impacts
- Water use (opportunity cost)
- Coal mining (annual damage cost – mining, water pollution etc.)

Due to a lack of data, the following impacts had to be excluded from the analysis:

- Water quality
- Noise pollution
- Damage to roads
- Impacts of ash lagoons on water resources
- Issues of occupational health and safety
- Impacts of radionuclides and heavy metals in causing cancer
- Health cost related to ash dumps



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Estimated annual externality cost of Kusile

	Net output	Externality cost			
	GWh	Low (R million)	R/kWh (Low)	High (R million)	R/kWh (High)
Health	32 301	182.8	0.006	213.3	0.007
Climate change	32 301	3 148	0.097	5 334	0.165
Water use	32 301	21 305	0.660	42 357	1.311
Mining	32 301	6 538	0.202	12 690	0.393
Total		31 174	0.97	60 594	1.88
Total excluding water for generation purposes*		9 869	0.31	18 237	0.56

* For illustrative purposes only

The True Cost of Kusile

- If you include the four hidden costs for Kusile:

The externality costs per kilowatt hour could be as high as:

- **R1.88/kWh**

An externality inclusive electricity tariff - based on nationwide average tariff of R0.41/kWh in 2010 - could be as high as:

- **R2.29/kWh**
- **459% of the 2010 tariff**

This means the externality costs of Kusile could be as high as
R60.6 billion PER YEAR (x 50 years)

This report provides compelling evidence that South Africa must end its addiction to coal.

Renewable energy instead?

Findings from the study:

- Only 30% of Kusile's external costs (R60 billion per year x 50 years) could fund 5 times Kusile's proposed power generation capacity from renewable energy sources.
- If investments were shifted to renewable energy, they would likely be recovered from the damage cost of Kusile within 3,5 years.

Advanced Energy [R]evolution: possible to not build Kusile and get 50% of South Africa's electricity from renewables by 2030.

- **Benefits:** job creation, energy security and access, reduced contribution to climate change
- **BUT:** significant barriers to renewable energy must be removed.



Coal in South Africa

- Coal is not cheap. The True Cost of Coal is destruction at every step and the True Cost of Kusile is R60 billion per year.
- SA must phase out coal in a just transition
- Greenpeace is calling for the end of the construction of Kusile because of its massive social, environmental and economic impacts.
- Instead, Eskom should be investing in large-scale and smaller scale decentralised renewable energy, which would be able to deliver sustainable electricity to all South Africans.

