

# Kusile coal power plant South Africa

**Sectors:** Coal Electric Power Generation

## ● On record

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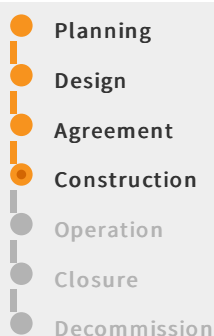
## Status



**Sectors** Coal Electric Power Generation

**Location**

**Status**



**Website** [http://www.eskom.co.za/Whatweredoing/NewBuild/Pages/Kusile\\_Power\\_Station.aspx](http://www.eskom.co.za/Whatweredoing/NewBuild/Pages/Kusile_Power_Station.aspx)

## About Kusile coal power plant

The Kusile coal fired power plant project is located in the province of Mpumalanga, in South Africa, initiated by Eskom, the state electricity company. With 4800 megawatt, it will be one of the largest power plants of its kind in the world and one of the largest industrial point sources of greenhouse gas emissions. This project continues to promote outdated, heavily polluting and harmful fossil fuel technology. Initially expected to take six years to complete, the project is not expected to complete Unit 1 until 2017 and the entire project not until 2021.

## What must happen

South Africa has abundant renewable energy resources, including onshore and offshore wind and solar power. These have been assessed by the government, as part of the development of its climate policies.

Combined with energy efficiency measures and more decentralised energy provision, these resources offer the potential for South Africa to transition towards a low carbon power sector and economy, with appropriate financial support from developed countries.

-readmore-

The government has introduced a feed-in tariff system designed to promote renewable energy generation. This policy is, however, at odds with the vision for power generation promoted by Eskom. It is considered a "fig leaf" in South Africa. Most research and development is still being directed to coal (e.g. futile carbon capture and storage schemes) and nuclear.

That is why the building of Kusile must stop immediately. **All financial institutions involved have to stop the financial services they contracted with Eskom as long they are used to build the Kusile power station. Banks should declare a moratorium in financing new coal-fired power plants as an urgent climate protection measure. Capital should instead be directed at energy efficiency and renewable energy financing opportunities.**

Eskom should engage in serious demand-side management, beginning by phasing out electricity to smelters that have little linkage with the South African economy and that are capital- rather than jobs-intensive.

Concrete plans should be made for a "just transition", so as to provide alternative, well-paid "green jobs", e.g. in subsidised thermal-solar geysers for every house, to those workers who are employed at the smelters. At the same time, the special purchase agreements should be disclosed to the public and opened for renegotiation.

The freed up energy should be redistributed to provide for a much larger lifeline supply of universal free basic electricity, with a rising block tariff to encourage conservation to improve spinning margins which will buy time for a switch into renewable energy technologies. By not expanding its coal/nuclear facilities and instead redistributing the electricity capacity it has, and by simultaneously switching to renewable sources, Eskom can survive the financial and electricity access crises, and help the world solve the climate crisis. At present it is Africa's main contributor to both crises.

## Issues

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### Human rights and social issues

Kusile will be responsible for local population displacement and economic harm:

- The plant will require the relocation of 27-43 families, around 300 people. With the aid of the Expropriation Act, Eskom can determine "appropriate" compensation value for the land required for the project. In a particularly cynical and Orwellian fashion the EIA suggests leasing back expropriated land to displaced farmers as a "mitigation measure" to reduce economic impact associated with the project.
- Less than 50% of the economic benefits of this project will be accrued to South Africa as more than half of project financing will be spent on imported equipment and the hiring of foreign specialists. Currently, the poor in South Africa consume less than 5% of grid connected power, in contrast to the 38 largest corporations that consume 40%. In reality, the poor are paying far more per kilowatt for their electricity than export-oriented metals and mining industries that overwhelmingly benefit from these projects while repatriating the vast bulk of their profits abroad.
- Energy prices were expected to go up by 12.7% for the year 2015-2016. However Eskom is planning a new application to increase this tariff to **25.3%** as of July. It has asked for the tariff hike to keep the open-cycle gas turbines running and reduce load-shedding. Eskom has had to sell several non-core assets to increase their capital. It has a shortfall of ZAR250 billion and its energy grid has an operational reserve capacity of 1.3%. The energy rise will have an extensive impact on their customers and the rolling black-outs are likely to continue regardless.

### Environmental issues

Kusile will significantly contribute to **climate change**: The annual green house gas equivalent emissions for this single project, 36.8 million tonnes, would increase South African energy sector emissions by 12.8% and the country's total contribution to climate change by 9.7%. This despite the fact that South Africa already has the distinction of being amongst the top global greenhouse gas emitters per capita. Its energy sector is twenty times more CO2 intensive per capita GDP than even the USA's. Despite the immensity of its climate impacts, the EIA dedicated less than one page of a 174 page document to the subject with no mitigation measures proposed.

Kusile will also lead to **high pollution and health impacts**:

- Sulphur dioxide – According to the US Environmental Protection Agency, SO2 contributes to serious cardiovascular and respiratory illnesses such as asthma and heart disease and can cause premature death. The project EIA demonstrates that the current ambient background sulphur levels already far exceed permitted levels. The project therefore will only serve to add to these dangerously high levels rendering the area unable to comply with internationally recognized limits for toxic sulphur emissions.
- "The exceedances [of existing sources] were six times above hourly SO2 limits, for more than 200 hours per year; and 20 to 30 days per year, making it challenging for cumulative concentrations to be within limits regardless of the site selected, the stack height or the SO2 control efficiency implemented... even for the best case scenario, exceedances still increased by some 30% above the future base case scenario... Impacts on human health as a result of the additional emissions of SO2 are therefore deemed to have a high significance."
- Toxic fly ash – Fly ash from coal burning contains heavy metals and other toxics such as arsenic, uranium and mercury, which can cause cancer and neurological and developmental disorders. Approximately 1,000 hectare of land would be required to accommodate a toxic above ground fly ash dump for the life of the coal fired power station i.e. 40 – 50 years. This dump "could have direct and indirect impacts on the aquatic environment...The impact would have a high magnitude and long term duration...accordingly a high significance impact is anticipated."
- Nitrogen oxides – NOx can mix with other compounds to produce volatile substances and causes or worsens respiratory and cardiovascular illnesses such as emphysema, bronchitis, and heart disease, increasing hospital admissions and premature death. Despite the fact that this is a major pollutant produced from burning coal, the project completely avoids addressing specific mitigation measures for NOx pollution saying they are "...not considered in any further detail."
- Contaminated water supplies - The plant will require a supply of 17 metric tonnes of coal per year, which will stimulate demand for new environmentally harmful mines. This in turn will have an adverse impact on water quality and peoples' health. Much of South Africa's coal is surface-mined poor quality coal, with high ash and sulphur content, which will require washing before being burned in the plant, thus adding burden on scarce water supply as well as causing more pollution.

## Governance

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## Updates

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### Kusile expected to be operational second half of 2017

Jan 31 2017

[Eskom has indicated](#) that the first synchronisation of Kusile Unit 1 is now scheduled for the first half of 2017, with the 800 MW unit expected to enter commercial operations in the second half of 2017.

### Control and Instrumentation near completion

Feb 5 2016

This completion of control and instrumentation is an indicator in terms of how far the project stands. It is expected that, by the first half of 2018, Unit 1 will be online ([source www.fin24.com](#)).

### Eskom expects no load shedding before April 2016

Nov 6 2015

[According to enerdata.net](#): South Africa's national power utility Eskom does not anticipate any load shedding before late April 2016. The company has just reached 50 days without any load shedding despite significant maintenance projects being undertaken over the past two months.

### Medupi power plant starts delivery

Mar 3 2015

Medupi, the power plant identical constructed as to Kusile, has started delivery to the South African electricity grid. This after a delay of four years and at nearly double the initial budgeted [project costs](#).

### Eskom confirms Kusile Unit 1 sync slips to first half 2017

Jan 15 2015

Embattled power utility Eskom, which has been experiencing major delays and cost overruns at its two coal-fired megaprojects Medupi and Kusile, gave an assurance that the synchronisation of Medupi Unit 6 is only weeks away, with pipe restoration work between the boiler and the turbine currently under way ([source: www.miningweekly.com](#)).

### Bond Issuance

Jul 1 2013

In July 2013 Eskom Holdings issued new 10-year bonds with a total value of USD 1 billion. The proceeds of the issuance were used for general corporate purposes. Both Barclays and Citi assisted with the issuance of these bonds, underwriting them for USD500 million each. It is assumed that half of the bond issuance was devoted to the Kusile power plant and the other half to Medupi.

### Developments in 2011

Aug 18 2011

The Kusile power plant is [threatened due to a 25 percent rise in electricity](#) tariffs. It has been said that at 33c/kWh, Eskom is not covering its operating costs. Eskom also has raising costs in their capital expenditure programme. The forecasts of the programme have risen from ZAR84 billion in 2005 to ZAR385 billion. In order to deal with the financial issues faced by Eskom, some solutions have been given such as a loan levy, a review of Nersa's tariff decision, extra equity investment by the government and increasing government guarantees for Eskom debt. After weeks of protests at both [Medupi](#) and Kusile power plants, the Medupi power plant resumed operation on May 23, 2011. Kusile is only partially resumed while talks continue to end the protests. The protests began when foreigners were hired as welders while other local contacts were being ended. To read more about the protests [go here](#).

On April 14, 2011 the Board of Directors of the U.S. Export-Import Bank (Ex-Im Bank) voted to approve USD805 million in subsidized financing for the project.

Eskom said it had signed loans totalling EUR705 million (USD917.5 million) from German and Japanese banks as well as obtaining some funds from South African banks. The loans are repayable over 12 years, starting six months after units of the plant are commissioned, it added. The utility is now looking for more financing to complete the Kusile plant, but it is not mentioned how much was needed.

## Financiers

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### Banks



Advisor		October 2010
<p>Help it with the design and implementation of what will be a multibillion-rand international bond programme, which could kick off in the US early 2011  <i>source:</i> <a href="#">link</a></p>		
Advisor		April 2010
<p>Advising Eskom on its funding options  <i>source:</i> <a href="#">link</a></p>		
<b><a href="#">KfW IPEX-Bank Germany</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
Debt – corporate loan	EUR 705 million	December 2009
<p>Part of € 705 million syndicated loan - ECA/Euler Hermes-covered loan used to fund part of the foreign content of the Kusile boiler contract with Hitachi Power Europe (HPE)  <i>source:</i> Eskom Press Release</p>		
<b><a href="#">Mitsubishi UFJ Financial Group (MUFG) Japan</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
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<b><a href="#">Natixis France</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
Debt – corporate loan	EUR 1,185 million	December 2009
<p>Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile  <i>source:</i> <a href="#">link</a></p>		
<b><a href="#">Nedbank Group South Africa</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
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<b><a href="#">Rand Merchant Bank</a></b>		<a href="#">Details</a> ▼
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<b><a href="#">Société Générale France</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
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<b><a href="#">Standard Bank South Africa</a> <a href="#">profile</a></b>		<a href="#">Details</a> ▼
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## Export credit agencies

<b><a href="#">COFACE (second entry - do not use!)</a></b>		<a href="#">Details</a> ▼
Debt – corporate loan	EUR 1,185 million	December 2009
<p>Covering 5 French banks syndicated loan  <i>source:</i> <a href="#">link</a></p>		

## [Euler Hermes Kreditversicherungs-AG \(Hermes\)](#)

[Details](#) ▼

Debt – corporate loan EUR 705 million December 2009

Covering 7 banks syndicated loan in three parts  
*source:* Eskom Press Release, December 11, 2009

## [Export-Import Bank of the United States \(Ex-Im Bank\)](#) United States [profile](#)

[Details](#) ▼

Debt – project finance USD 805 million April 2011

The funding will pay for the engineering and construction services of Black & Veatch, a US- based company  
*source:* [link](#)

### Investment funds

## [Public Investment Corporation \(PIC\)](#)

[Details](#) ▼

Approached, interested USD 1.2 billion May 2010

Plans to invest up to this amount in the expansion projects of Eskom  
*source:* [link](#)

### Multilateral development banks

## [African Development Bank](#)

[Details](#) ▼

Debt – corporate loan USD 500 million November 2008

Non-sovereign loan to support the capital expenditure program of Eskom. Proceeds of the loan were used for Medupi and Kusile  
*source:* Thomson One Database, Tearsheet 2415629115, 12 November 2008;

## [Development bank of Southern Africa](#)

[Details](#) ▼

Debt – corporate loan USD 2.17 billion November 2010

This loan will be drawn over five years and does not utilize guarantees from the South African Government. The loan was mainly used for the Medupi and Kusile coal-fired power stations and the Ingula Pump Storage scheme with its associated transmission infrastructure.  
*source:* Development Bank of Southern Africa

### Related companies

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#### **Alstom France** [show profile](#)

Was responsible for the control and instrumentation works at Kusile power station. Consensual termination has been reached on a co-operative walk-away basis in March 2015.

#### **Eskom South Africa** [show profile](#)

**Nuclear Electric Power Generation | Coal Electric Power Generation**

#### **Siemens Germany**

Control and instrumentation works for the Kusile power station.