Kusile coal power plant South Africa

Sectors: Coal Electric Power Generation

On record

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Created before Nov 2016
Last update: Aug 8 2018

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Project website

Sector	**Coal Electric Power Generation**
Location	
Status	Planning Design Agreement **Construction** Operation Closure Decommission
Website	http://www.eskom.co.za/Whatweredoing/NewBuild/Pages/Kusile_Power_Station.aspx

About Kusile coal power plant

Located in the Nkangala district of Mpumalanga in South Africa, the Kusile Coal Power Plant is being developed by the state-owned utility Eskom. Consisting of six 900-megawatt units, the plant is expected to be theworld's largest coal fired power plant when completed. Development continues despite several design defects. The first unit of the plant was connected to thenational power grid in 2017, with the second unit following in 2018. The third unit is set to start operating in April 2021. If development and construction takes place according to the planned schedule, the plant is expected to be fully operational by 2024.

Latest developments

Kusile expected to be operational second half of 2017
Jan 31 2017

Control and Instrumentation near completion
Feb 5 2016

Why this profile?

Coal is the number one driver of climate change, and construction of new coal-fired power plants anywhere is incompatible with combating climate change. In addition the project will have severe impacts on health and livelihoods.

What must happen

The building of Kusile must stop immediately. Financial institutions should stop providing any finance to Eskom that may be used to build the Kusile power station. Banks should immediately call an end to financing new coal-fired power plants as an urgent climate protection measure.

Impacts

Social and human rights impacts

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 and climate impacts

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 emissions 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

Brief history

The environmental impact assessment for the Kusile Coal Plant was conducted in March 2006. Environmental authorization for the project was issued in 2008 and soon after, the construction operations commenced. Eskom estimated to bring the plant under full operational status by 2019, but delays occurred at many stages. The first unit was brought to commercial operation in August 2017 and the second unit followed in April 2018. In February 2019, various defects were detected in the Kusile and Medupi plants and Eskom stated that it would need an additional ZAR 8 billion to fix these defects. In March 2019 the third unit was synchronized to the grid. Even though units 2 and 3 were connected to the national grid, they still underwent testing and commissioning in July 2019. In October 2020, the second unit achieved commercial operation.

Updates

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

Banks

BNP Paribas France profile Details ▼

Debt – corporate loan EUR 1,185 million December 2009

Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile

source: link

Bank of America United States profile Details ▼

Advisor October 2010

Merrill Lynch to 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

source: link

Barclays United Kingdom profile Details ▼

Advisor October 2010

Absa to 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

source: link

Credit Suisse Group Switzerland profile Details ▼

Advisor — April 2010

Helping with the sale of a stake in Kusile
source: link

Crédit Agricole France profile — Details ▼

Debt – corporate loan — EUR 1,185 million — December 2009

Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile
source: link

Crédit Mutuel France profile — Details ▼

Debt – corporate loan — EUR 1,185 million — December 2009

Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile
source: link

Deutsche Bank Germany profile — Details ▼

Debt – corporate loan — EUR 705 million — December 2009

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)
source: Eskom Press Release

FirstRand Bank Ltd South Africa profile — Details ▼

Approached, interested — EUR 705 million — December 2009

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). Rand Merchant bank participated in the loan and is a wholly owned division of FirstRand Bank Ltd.
source: Eskom Press Release, 11 December 2009

HSBC United Kingdom profile — Details ▼

Debt – corporate loan — EUR 705 million — December 2009

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)
source: Eskom Press Release

JPMorgan Chase United States profile — Details ▼

Advisor — October 2010

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
source: link

Advisor — April 2010

Advising Eskom on its funding options
source: link

KfW IPEX-Bank Germany profile — Details ▼

Debt – corporate loan — EUR 705 million — December 2009

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)
source: Eskom Press Release

Mitsubishi UFJ Financial Group (MUFG) Japan profile — Details ▼

Debt – corporate loan | EUR 705 million | December 2009

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)
source: Eskom Press Release

Natixis France profile Details ▼

Debt – corporate loan | EUR 1,185 million | December 2009

Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile
source: link

Nedbank Group South Africa profile Details ▼

Debt – corporate loan | EUR 705 million | December 2009

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)
source: Eskom Press Release

Rand Merchant Bank South Africa profile Details ▼

Debt – corporate loan | EUR 705 million | December 2009

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)
source: Eskom Press Release

Société Générale France profile Details ▼

Debt – corporate loan | EUR 1,185 million | December 2009

Part of € 1,185 million syndicated loan - ECA/Coface-covered loan to fund turbine contracts with Alstom for the Medupi and Kusile
source: link

Standard Bank South Africa profile Details ▼

Debt – corporate loan | EUR 705 million | December 2009

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)
source: Eskom Press Release

Export credit agencies

COFACE (second entry - do not use!) Details ▼

Debt – corporate loan | EUR 1,185 million | December 2009

Covering 5 French banks syndicated loan
source: link

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