

COPI7 fact sheet

Kusile and Medupi coal-fired power stations under construction

Medupi and Kusile have been recommended to the certification board for certification to the ISO 14001 Environmental Management System standard.

With 93% of Eskom's electricity generated from coal-fired stations, this already implies a major environmental footprint. This also means an impact on water – a critical issue for South Africa where water scarcity is an important matter. For this reason the new Medupi and Kusile power stations will use dry cooling technology.

Both Medupi and Kusile are similar **super-critical coal-fired power stations**, which means are more efficient than our current fleet of coal fired power stations resulting in being able to produce more electricity with less coal, water and therefore producing less emissions per unit of electricity generated.

Both Medupi and Kusile will have **fabric filter plants to reduce ash emissions, and low NOx burners which control the temperature of combustion** and so reduce NOx emissions by around 40%.

A flue gas desulphurisation plant, which reduces sulphur dioxide emissions by at least 90% by reacting it with a limestone sorbent, will be installed at Kusile and later retrofitted at Medupi. These constitute substantial investments into air pollution control technology, and demonstrate Eskom's commitment to continually improving environmental performance.



Kusile power station

- **Technology:** Coal, dry cooling, flue-gas desulphurisation (FGD) to remove sulphur dioxide emissions and carbon capture and storage ready (CC&S)
- Bag filters to remove particulate emissions
- **Output:** 4 800MW (6 x 800MW units)
- **Location:** Emalahleni
- **Completion date:** 2018

Kusile Power Station Project is a project that encompasses the construction, commissioning and operation of a new coal-fired power station and its associated infrastructure next to the existing Kendal Power Station in the Witbank area of the Mpumalanga Province. The project is managed by a team of highly skilled professionals with a World Class safety management team producing top performance.

(Kusile - The dawn has come) Kusile is a Ndebele and Siswati word meaning "goodning". Kusile is the second most advanced coal-fired power plant project in Eskom after Medupi power station in Lephalale where construction commenced in 2007. As a rule, a coal-fired power station takes about eight years to build.



The station will consist of (6 X 800 MW) installed capacity. The first unit is planned for commercial operation in June 2013. Thereafter, the other units will be commissioned at nine-month intervals, with the last unit expected to be in commercial operation by 2017.

The Kusile Power Station will be the first Eskom project to implement Flue Gas Desulphurization (FGD) on the entire site. Each supercritical boiler will be about 115 meters high. Each air cooled condenser (ACC) will be constructed on and support by twenty 50 meter high columns. Each chimney will be about 220 meters high and contain three flues.



Medupi power station

- **Technology:** Coal, dry cooling, flue-gas desulphurisation (FGD) to remove sulphur dioxide emissions
- Bag filters to remove particulate emissions
- **Output:** 4 764MW (6 x 794MW units)
- **Location:** Lephalale
- **Completion date:** First unit in 2012 and completion in 2015, commissioning of FGD plant planned for 2018

Medupi is a greenfield coal-fired power station located West of Lephalale, Limpopo Province, South Africa. The name Medupi is a Sepedi word which means rain that soaks parched lands, giving economic relief.

Medupi is made up of 6 X 800MW units with a total capacity of 4 800MW. This baseload power station is the first in Eskom to have super critical boiler and turbine technology designed to operate at higher temperatures and pressures. Medupi utilises direct dry cooling technology designed to operate in areas with severe shortage of water.

Medupi Power Station has a 50 year design lifespan. This is the 4th largest coal-fired and the 22nd largest power plant in the world. It is the 4th dry cooled baseload station built in 20 years

in South Africa after Kendal, Majuba and Matimba. The power station is the world's largest dry cooled coal-fired power station in the world.

This power station has a baobab tree that happens to be the beacon of the project. This tree has been pruned into a three stem unit and transplanted at what will be the main entrance to the power station.

The commissioning of the first unit is scheduled in 2012. The remaining units will be commissioned at eight-month intervals, having the final unit commissioned by 2015

Kusile and Medupi will be the third and fourth largest coal-fired power plants in the world, respectively.

