



Eskom's generation plant mix

Eskom uses various technologies to generate electricity, the combination of which is called the 'plant mix'.

The utility is constantly investigating other forms of energy and renewable energy sources that could be used to expand its current plant mix and has initiated various research projects looking at wind, solar and biomass sources of energy.

Coal-fired base load power stations make up the largest portion of Eskom's plant mix. These stations use coal as their energy source and operate 24 hours a day to meet the demand for electricity. Eskom's Generation Division has 13 coal-fired power stations with an installed capacity of 37 745 MW. Their total net output, excluding the power consumed by their auxiliaries and generators currently in reserve storage, is 34 952 MW.

Africa's only nuclear power station, Koeberg, is also a base load station, with an installed capacity of 1 910 MW of power. Koeberg's total net output is 1 830 MW.

The generation mix also includes two conventional hydroelectric power stations and two hydro pumped storage schemes. These stations are used when there is a sudden increase, or peak, in the demand for electricity which cannot immediately be met by the base load stations. They have a combined installed capacity of 2 000 MW.

The last of the present mix are four quick reaction gas turbine power stations with an installed capacity of 2 426 MW. These stations are used only at peak periods and during extreme emergencies due to their very high operating costs. The two smaller, 'older generation' open cycle gas turbine stations (OCGTs) use kerosene to power their engines whereas the two new gas power stations run on diesel.

Eskom has also invested in two wind farms. In 2002/03, it erected three wind turbines at an experimental wind energy farm at Klipheuvel on the West Coast near Cape Town. The electricity generated by the wind facility is fed directly into the regional distribution network. Eskom is also currently constructing a new wind energy facility in the Western Cape. [Sere wind farm](#) is Eskom's flagship renewable project, demonstrating the power utility's commitment to sustainable development.



Plant Mix

Type	Installed / nominal capacity	Location
Coal-fired stations * (Currently in a re-commissioning phase which started in 2005) 	Arnot: 2 352 MW (1 x 370 MW, 1 x 390 MW, 2 x 396, 2 x 400 MW)	Middelburg, Mpumalanga
	Camden: 1 510 MW (2 x 200 MW, 1 x 195 MW, 2 x 190 MW, 1 x 170 MW, 1 x 180 MW, 1 x 185 MW)	Ermelo, Mpumalanga
	Duvha: 3 600 MW (6 x 600 MW)	Witbank, Mpumalanga
	*Grootvlei: 1 200 MW (6 x 200 MW)	Balfour, Mpumalanga
	Hendrina: 1 965 MW (8 x 200 MW, 1 x 195 MW, 1 x 170 MW)	Hendrina, Mpumalanga
	Kendal: 4 116 MW (6 x 686 MW)	Witbank, Mpumalanga
	*Komati: 940 MW (5 x 100 MW, 2 x 125 MW, 2 x 95 MW)	Middelburg, Mpumalanga
	Kriel: 3 000 MW (6 x 500 MW)	Kriel, Mpumalanga
	Lethabo: 3 708 MW (6 x 618 MW)	Sasolburg, Free State
	Majuba: 4 110 MW (3 x 657 MW, 3 x 713 MW)	Volksrust, Mpumalanga
	Matimba: 3 990 MW (6 x 665 MW)	Lephalale, Limpopo
Matla: 3 600 MW (6 x 600 MW)	Kriel, Mpumalanga	
Tutuka: 3 654 MW (6 x 609 MW)	Standerton, Mpumalanga	
Nuclear station	Koeberg: 1 910 MW (1 x 940 MW, 1 x 970 MW)	Melkbosstrand, Western Cape
Conventional hydro stations – Orange River	Gariep: 360 MW (4 x 90 MW)	Norvalspont, Border of the Eastern Cape and Free State
	Vanderkloof: 240 MW (2 x 120 MW)	Petrusville, Northern Cape
Pumped storage schemes	Drakensberg: 1 000 MW (4 x 250 MW)	Bergville, KwaZulu Natal
	Palmiet: 400 MW (2 x 200 MW)	Grabouw, Western Cape
Gas fired stations 	Acacia: 171 MW (3 x 57 MW)	Cape Town, Western Cape
	Port Rex: 171 MW (3 x 57 MW)	East London, Eastern Cape
	Ankerlig: 1 338 MW (4 x 149,2 MW, 5 x 148,3 MW)	Atlantis, Western Cape
	Gourikwa: 746 MW (5 x 149,2 MW)	Mossel Bay, Western Cape
Windfarm	Klipheuwel: 3 MW (1 x 660 kW, 1 x 1 750 kW, 1 x 750 kW)	Klipheuwel, Western Cape
<ul style="list-style-type: none"> • Generation's total Installed Capacity: 44 084 MW • NOTE: Eskom's Total Installed Capacity: 44 145 MW includes an additional 61 MW from Colley Wobbles, First Falls, Ncora and Second Falls hydro power stations operated by the Distribution Division 		



New build programme

Type	Installed / nominal capacity	Location
Coal-fired power stations	Kusile Power Station (4 800 MW)	Mpumalanga
	Medupi Power Station (4 800 MW)	Lephalale
Pumped storage schemes	Ingula Pumped Storage Scheme (1 332 MW)	Free State / Kwa-Zulu Natal
Wind energy facility	Sere Windfarm (100 MW)	Vredendal, Western Cape

Produced by: Generation Communication
 GX 0001 Revision 12 (August 2011)
 Source: Eskom Holdings Limited Integrated Report 2011

