

## WATER SUPPLY Factsheet

### 1. What is water used for in power generation?

Water is a critical primary resource used in the generation of electricity. Eskom's base load power stations are primarily coal fired and located inland (Mpumalanga, Free State and Limpopo) and is supplied with raw fresh water from several water supply systems. The water is used for:

- Cooling (largest use in wet cooled station)
- Steam generation
- Ashing
- Washing
- Air emission and abatement

### 2. Where does Eskom get water from for its coal fired power stations?

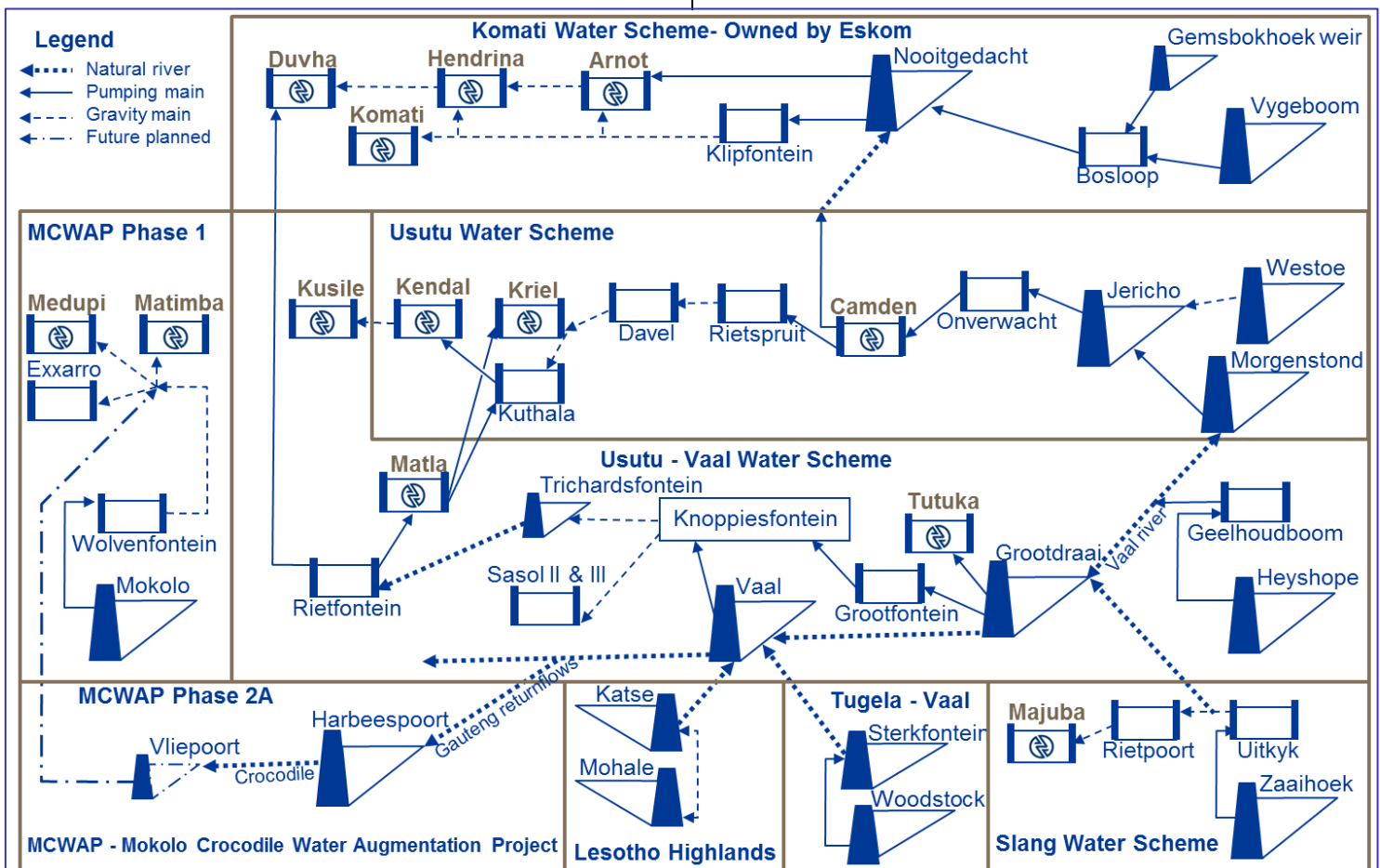
The Vaal River Eastern Sub-System (VRESS) supplies water to eleven of Eskom's power stations and is part of the Integrated Vaal River System (IVRS).

The following water schemes or sub-systems supply water to Eskom:

- Komati Water Scheme
- Usutu Government Water Scheme
- Usutu-Vaal Government Water Scheme Phase 1 & 2
- Slang Water Scheme

These schemes have over the years been interconnected and at present almost function as one big scheme. Although The Department of Water and Sanitation (DWS) still determines and make use of scheme specific yields, when modelling the system, only the combined yield of the system is taken into account.

The VRESS is supported by a pipeline link from the Vaal Dam and is called the Vaal River Eastern Sub-System Augmentation Project (VRESAP). The VRESAP can transfer a maximum of 160 Million m<sup>3</sup> per annum and also links the VRESS with the important water supply



from the Lesotho Highlands Water Project.

Eskom also use water from the Mokolo system for water supply to Matimba and Medupi power stations. This system will in future also be connected to the Crocodile West system and will be called the Mokolo Crocodile West Augmentation Project (WCWAP). The Crocodile River receives return flows from many Gauteng effluent treatment plants that will be used by Medupi and other users. This effectively links the MCWAP with the IVRS.

### 3. Power Station Raw Water allocation

Eskom has 'n bulk water use licence on the VRESS of 360.3 Million m<sup>3</sup> per annum. This licence includes all eleven power stations and also possible future use of water at the Underground Coal Gasification (UCG) plant near Majuba. The licence is valid until 31 October 2025 and can be reviewed on a 5 year interval.

Water User	Water Scheme	
Arnot	Vaal River Eastern Sub-System	Komati
Duvha *		
Hendrina		
Komati		Usutu
Camden		
Kriel *		
Transfer to Komati		
Tutuka		Usutu-Vaal Phase I
Matla		
Kriel *		
Duvha *		
Kendal		
Kusile		Usutu-Vaal Phase II
Heyshope to Grootdraai		
Heyshope to Usutu		
Majuba		Slang
Transfer to Grootdraai		
Lethabo	Vaal	
Grootvlei		
Transfer to Usutu-Vaal		
Matimba	MCWAP	
Medupi *		

Table 1: Water Schemes per Power Station

### 4. How much water does Eskom use?

Eskom used an average of 320 000 MI per annum over the past 10 years. This includes all Coal-fired power

stations, Nuclear and New-build power stations. The water usage is likely to come down in future as the newly build dry-cooled power stations' units come on line.

**For more information:**

*Dan Govender (Primary Energy Water Operations)*

Work: +27 11 800 4080

E-mail: [Dan.govender@eskom.co.za](mailto:Dan.govender@eskom.co.za)

*Mpetjane Kgole (Risk & Sustainability Divisions)*

Work: +27 11 800 4121

E-mail: [KgoleM@eskom.co.za](mailto:KgoleM@eskom.co.za)