



Lani van Vuuren

Minister of Water Affairs & Forestry Lindiwe Hendricks and Eskom CE Jacob Maroga at the signing of the Memorandum of Understanding between the two parties at Kwa-Thema.

Water & Energy Join Hands to Avert Future Crisis

Lessons learnt from the present electricity crisis should be applied to ensure similar deficiencies are not experienced in the water sector, said Minister of Water Affairs & Forestry Lindiwe Hendricks. She was speaking at the signing of a Memorandum of Understanding (MoU) between the Department of Water Affairs & Forestry (DWAF) and Eskom at Kwa-Thema, in Gauteng, in March. Lani van Vuuren attended the event.

The MoU is aimed at facilitating broader cooperation on issues relating to efficient water use at Eskom's power generation plants. "While the country is not experiencing a water crisis at present, there is no denying that South Africa is water scarce, and we cannot afford to rest on our laurels and think that because we have good infrastructure and recently had good rainfall that there is a guarantee of long-term water security. We cannot afford to waste water, we cannot allow people to take more than their allocation, and we cannot allow people to use water unlawfully," Hendricks said.

"Our colleagues at Eskom will only be too aware that the timely implementation of effective and comprehensive energy demand management would have dramatically lessened the

current electricity crisis. That experience teaches us in the water sector of the need to ensure that our water conservation and water demand management programmes are high up on the agenda and are comprehensively implemented," the minister continued. "Dams are extremely expensive to build and by implementing water conservation measures not only do we contribute to environmental sustainability, but also help to delay the date by when

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we need to start constructing the next water scheme."

According to the minister municipalities play a key role in initiating and driving local water conservation programmes and, along with provincial governments, needed to work towards creating a more water efficient South Africa. "Measures to be implemented include public education campaigns, water pricing (tiered water or block tariffs to penalise excessive use), and subsidies," Hendricks said.

The latest MoU signed by DWAF and Eskom seeks to establish a strategic partnership between the two parties in best water management practices and water performance improvement within power generation in South Africa. This will create a platform for sharing information and guiding regulatory initiatives and exploring synergistic opportunities

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Chair of the Portfolio Committee on Water & Forestry, Connie September, said water and energy were “twins” and “one cannot conserve the one without conserving the other.”

between Eskom’s energy efficiency and demand side management programme and DWAF’s water conservation and water demand management programme, among others.

“Both DWAF and Eskom recognise that there is still significant room for improvement in water efficiencies, which will be further explored within the scope of this MoU,” Hendricks explained. “We are looking forward to working with Eskom to develop innovative solutions and improve current levels of water use efficiency in their power plants.”

Water is critical to the power generation process. Eskom is one of the country’s largest consumers of fresh water, accounting for some 2% of South Africa’s total water consumption annually. The company’s power generation plants use about 325 Mℓ/year of water.

“It is therefore critical for Eskom and DWAF to enter into a strategic partnership to encourage the sustainable use and availability of water and energy sources into the future,” noted Eskom CE Jacob Maroga. “Eskom acknowledges the scarcity of water in South Africa, and actively supports the initiatives of the department in areas of water conservation, water demand management and water quality.”

He reported that the company was active in the field of electricity conservation.

This has implications for water conservation. (In fact, for every kilowatt hour of electricity that is saved, about 1,32 ℓ of water is also saved on average.) “Eskom has pioneered dry-cooling technology as its main cooling method to reduce its water consumption, and this technology has been adapted for the company’s new power stations inland.” A conventional wet-cooled power station consumes about 50 Mℓ/year of water as opposed to a dry-cooled power station which consumes about 3 Mℓ/year of water.

Examples of dry-cooled power stations include Matimba near Lephalale, in Limpopo, and Kendal, near Witbank, in Mpumalanga. Medupi power station, under construction near Lephalale at present, will also be dry-cooled. In addition, the power generation firm is working towards making its de-mothballed power stations Komati, Grootvlei and Camden more water efficient.

“Eskom is also committed to ensure that its water usage adheres to laws and regulations governing water allocations and quality objectives,” noted Maroga. “As far as our new build projects are concerned, we have been working closely with DWAF to ensure that our water requirements are met. We are therefore confident that water will be delivered to meet the commissioning dates of the various power station units.”

Chair of the Portfolio Committee on Water and Forestry, Connie September, who also attended the MOU signing, expressed her delight at the signing of the MOU. “Water and electricity are twins. The Portfolio Committee hopes that this agreement will bring long-term solutions and that the minister will be able to report positive actions to us soon.” 

**WATER IN POWER PLANTS:
WET COOLING VS. DRY COOLING**

A conventional wet-cooled power station uses a re-circulating system in which cooling takes place via evaporation in an open cooling tower. About 75% of the total quantity of water supplied to such a power station evaporates through these open cooling towers. In contrast, dry cooling technology does not rely on open evaporative cooling for the functioning of the main systems. As a result, overall power station use is about 15 times lower than a conventional wet-cooled power station.

Source: www.eskom.co.za

Matimba power station near Lephalale, in Limpopo, is the largest direct dry-cooled station in the world, with a capacity in excess of 4 000 MW.

