Eskom's Ingula Unit 3 comes into commercial operation

Unit 3 of Eskom's Ingula Pumped Storage Scheme has been brought into commercial operation, adding 333MW to the electricity grid.

Ingula Pumped Storage Scheme

This now means that all four units that make up the plant, which is located on the cross-border of the Free State and KwaZulu-Natal, are now commercial and produce a total of 1,332MW.

The commercial operation of Unit 3 completes the Ingula Pumped Storage Scheme project, further strengthening security of power supply to South African homes and businesses.

“These units are now part of Eskom’s peaking fleet of power stations. Ingula can respond to demand increases on the national grid within two-and-a-half minutes,” said Eskom on Monday, 30 January.

Commercial operation is when the construction and optimisation of the unit is complete and the operator, Eskom Generation Division in this case, takes over the plant and runs it on a commercial basis.

Ingula Unit 3 was resynchronised to the grid in October 2016 post repairs based on an incident during the optimisation process.

“I am thrilled that we are on track to deliver all new build projects online timeously. This achievement would not have been possible without the hard working team at Ingula and strong executive leadership in Eskom,” said the utility’s interim group chief executive, Matshela Koko.

Construction of the plant began in 2005. Ingula is Africa’s newest and largest pumped storage scheme and the 14th largest pumped storage scheme in the world.

During his visit to the plant in July 2016, President Jacob Zuma said Ingula (an IsiNguni word that means ‘froth on top of fresh milk’) represents a legacy of a democratic South Africa that supports economic growth, development and ensures electricity supply.

The four units are located 350-metres underground in the world’s largest machine hall in mud-rock. To turn the more than 500 ton rotating mass of the generator rotor and turbine, water is released from Ingula’s upper dam - Bedford Dam - situated 460-metres higher and 2km away.

Water flows at high speeds down to the turbines at around 60km per hour with enough water passing through each turbine to fill an Olympic-sized swimming pool in six seconds. Rotating at 428 revolutions per minute, each unit will produce 333MW, a total for the station of 1,332MW.

Unit 4 went into commercial operation on 10 June 2016, while Unit 2 went into commercial operation on 22 August 2016. Unit 1 went into commercial operation on 30 August 2016.