



## Published Bimonthly in Collaboration with Ethiopian Electric Power

# Twin hydropower plants mystery

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Awash II and III Hydropower Plants are built on the Awash River on two kilometers distance, bordering East Showa and Arsi Zones in Oromia Regional State 123 kilometers Southeast of Addis Ababa near the town Awash Malkasa. The water that hits and drives the turbines of Awash II is designed to provide the same service to Awash III.

Their construction works were started in September 1964. Accordingly, Awash II Power Plant was officially inaugurated in November 1966 while Awash III Power Plant was instated in February 1968. Since then the two power plants are called the Twins as they are located in the same compound, started operations at the same time, and are run by the same management.

The civil construction of the win's power plants was carried out by the French company called COMPANIE INDUSTRIELLE DE TRAVAUX CITRA, while the hydro and steel structure works were built by INGRA ZAGREB, a former Yugoslavian company, and various foreign companies participated in other works.



**Engineer Robel Abebe**

When they were built, 330,000 cubic meters of soil were excavated, 110,000 cubic meters of concrete filling were done and 30,000 tons of cement was used.

Awash II has the capacity to hold over 2.6 million cubic meters of water while Awash III holds 70,000 cubic meters of water. Awash II is 1,530 to 1,470 meters above sea level while Awash III is 1,470 to 1,410.

The total construction cost of the plants was 60 million Birr. Nowadays, both power plants are carrying out their centuries-old

mission with a total of 120 employees: 80 permanent and 40 temporary.

The Power Plants Head Representative and Maintenance Manager Engineer Robel Abebe said that these are two independent power plants which were built to use the same water..

The water that hits the turbine is taken through penstocks that are one to two kilometers long. Accordingly, when the water hits the turbines, Kinetic energy is generated.

From the water that they contain, Awash II is 60 meters high while Awash III is 40 meters high. They run and rotate their own turbines. Consequently, the rotation of the turbine generates mechanical energy. Then, the mechanical energy that is connected to the power plants is converted into electrical energy.

Each power plant has two generators and produces a total of 64 megawatts of power. From the amount of water they have, they will be able to generate 182-gigawatt hours of energy per year.

They use one power transmission line as a grid. After Awash III gives the generated power to Awash II, they reunite with Awash I which is known as Koka. Koka

also combines the power and transmits it to the Kalit Power Distribution Station. Therefore, Awash II is also serving as the central grid.

Eight electricity lines which are coming from Awash II, serve as a distribution center and deliver the energy produced to customers located in Asella, Shashamane, and the eastern parts of the country. Awash II, apart from the 132 kilo-Volt line for export to Djibouti, is a contributing station by playing the role of "interconnection" or forming a combination with Koka and other lines, he elucidated.

They have been providing service for over 60 years with regular follow-ups and maintenance. Today, they are generating 98 percent of their plant's power. In terms of stabilizing the national electricity energy base, especially when the eastern part of the country faces fluctuations and disruptions in power distribution, Awash II plays stabilizing role, he noted.

Taking the significance of the Awash Power Plants into account and in order to sustain the power plants effectively, Ethiopia has developed maintenance capacity to maintain the power plants by its own

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