

## Tanzania pumped hydro storage

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To increase the capacity of generating electricity by using natural gas from 495.44&#8201;MW to 3507&#8201;MW up to the year 2031. The total estimated gas initially in place ranges from 8&#8201;TCF in 2005 to 55.08&#8201;TCF in 2015.

To use the renewable energy sources include biomass, solar and wind to install up to 260&#8201;MW in the short term planning. The average solar insolation distribution is about 200&#8201;W/m<sup>2</sup> and wind speed ranges from 5 to 9&#8201;m/s.

This article aims to develop the database of hydropower resources, technology development and barriers issues. Therefore, the article examines the developed and undeveloped hydropower resources for the purpose of understanding the past and future trend of hydropower resources contribution to the national energy balance.

The capacity of the installed large hydropower reached to 561.84&#8201;MW in Tanzania [8]. Table 1 presents the operated six large hydropower plants with the capacity and number of turbine unit, year completed, river allocation and region. The large hydropower allocated to two main rivers of Tanzania includes Rufiji river at the central part of Tanzania toward south-east to the Indian Ocean and Pangani river from Mt. Kilimanjaro to Tanga-Indian Ocean.

Pangani and Rufiji basins consist of Pangani and Rufiji rivers of which all large hydropower of Tanzania located, are strongly affected by agricultural activities. The agricultural activities upstream of the river reduce the amount of water and loose the in situ land caused the sediment to flow into the reservoir during the wet season. Table 9 presents the agriculture activities practised in the existing hydropower plants in Tanzania. The general concerns related to barriers to hydropower development are presented in Table 10.

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