

Hydro resources, About 89pc of possible power production yet to be harnessed

LAHORE: About 89 percent of the electricity production potential from hydro resources is yet to be harnessed as the current total installed capacity of the hydropower units of Pakistan is only 6556 MW.

It may be noted that the Indicative Generation Capacity Expansion Plan (IGCEP) 2047 of the federal government, covering the future horizon of energy for 28 years - from 2020 to 2047 has envisaged 55,836 MW of hydro power. The plan encapsulates electric power generation additions required in order to meet the future energy and power demand of Pakistan.

The Water and Power Development Authority (WAPDA) sources have pointed out that Pakistan has an enormous resource potential of hydropower with a suitable amount of water at appropriate terrains to generate electricity. The northern parts of the country are rich with significant hydropower resources, while few resources are also identified in the southern part of the country. It is estimated that these resources have a potential of 60,000 MW of electricity generation.

The key hydropower resources identified in the terrain of Hindukush, Himalayas, and the Karakoram ranges include flows from various rivers, namely Indus with a potential of 66 percent of electricity generation followed by Jhelum, 9 percent, Swat, 3 percent, Kunhar, 3 percent, Kandiah, 2 percent, Punch, 1 percent, and others, 16 percent.

They said only around 50 percent of the country population has access to on-grid electricity leading to long load shedding hours in rural and urban areas.

They said this huge shortfall of electricity is mainly owing to Pakistan's reliance on fossil fuels, which are a key source of huge import bills and expensive electricity.

Apart from these issues, they added, there are also various governance-related problems and hurdles behind these crises. Amongst these all, a lack of focus toward harnessing the indigenous RE resources is a noteworthy shortcoming that has not received any major attention in the planning and development processes in Pakistan.

The WAPDA sources said the total electricity generation capacity of Pakistan in 2017 had reached 29,944 MW and shares in electricity generation were comprised natural gas, 33.6 percent, oil, 32.1 percent, coal, 0.2 percent, hydropower, 26.1 percent, nuclear, 5.7 percent, and renewable energy, only 2.2 percent. In the total energy mix of Pakistan, the share of non-renewable is, as such, higher and needs to be reduced in order to ensure long-term sustainability and energy security.

Meanwhile, water sector sources have pointed out that RE resources are not only capable of meeting the ever-increasing demand for electricity, but they are also environment-friendly. These facts regarding RE resources are recognized globally, but Pakistan, though blessed with enormous RE potential, is making extremely slow progress in realizing the true potential of RE-based projects. In this context, they said, the Alternative Energy Development Board and the Pakistan Council of Renewable Energy Technologies are two key organizations of the government undertaking RE projects and technology development activities, respectively. However, the progress of these organizations is very slow and only some small RE-based projects have been installed in the country. The poor level of commitment from government, the overlapping management functions of the energy sector, and the lack of financial capacity and technical awareness are key barriers toward developing RE-based projects in Pakistan.