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Jayakwadi Hydro-Power plant- A Birds Eye view

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Abstract

Energy is required now more than ever due to population growth, industrialization and modernization. Challenges such as carbon dioxide (CO₂) emissions and depletion of conventional source of energy necessitate for renewable sources, of which hydro energy seems to be the most predictable. Hydro which is hydro energy provides electricity to communities by converting hydro energy into electrical energy. The Jayakwadi Hydro-Power plant at Paithan in Aurangabad is vital Hydro-electricity generator, in Marathwada region. This paper is an overview of Jayakwadi hydro-Power system by reviewing some of its basic components such as turbine and generator that make this conversion process possible. As well as its advantages and limitations will also be reviewed to provide the basic knowledge of hydro-power system.

Keywords: Hydro-power, Hydro-turbines, generator, electricity.

1. INTRODUCTION

Energy is the most fundamental sector for the progress of a nation [1]. It is inevitable for survival and indispensable for developmental activities to promote education, health, transportation and infrastructure for attaining a reasonable standard of living and is also a critical factor for economic development and employment [2]. Urbanization, economic development, industrialization and rapid increase in population growth have raised the demand for power generation manifolds [3]. As the human population and activities are progressively developing, it is most certain that the demand for energy worldwide is increasing as well, and this trend is most likely to continue in the future [4]. For meeting the expected energy demand as the population will rise and to sustain economic growth, alternative form of energy such as renewable energy needs to be expanded [5]. Hydro power energy is one of the most clean