

Differences in power distribution between power stations



Overview

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For energy developers, understanding the distinctions between grid stations, substations, and switchyards is essential to effectively plan and manage energy infrastructure. While these terms may sometimes be used interchangeably in casual conversation, they have distinct roles in the transmission.

The electricity supply chain consists of three primary segments: generation, where electricity is produced; transmission, which moves power over long distances via high-voltage power lines; and distribution, which moves power over shorter distances to end users (homes, businesses, industrial sites).

As the starting point of the power industry, power stations are mainly responsible for converting various primary energy sources into electrical energy (secondary energy). These energy sources come from a wide range of sources, including fossil fuels (such as coal, oil and natural gas), nuclear.

Substation refers to the place where voltage and current are transformed, electric energy is received and distributed in the power system. The substation in the power plant is a step-up substation, which is used to boost the power generated by the generator and feed it to the high-voltage grid.

A power transmission system refers to the bulk transfer of electrical energy from generating stations to secondary local load centers (substations) over very high-voltage circuits. Distribution refers to converting voltage at the load center to medium or low voltage and delivering it to end.

In the world of electricity, power substations serve as a critical connection between public utility transmission lines and distribution lines. There are many differences between power stations and substations that those interested in learning more about them should understand before starting on.

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