

Power distribution solution for 5G base station in Addis Ababa





Overview

What is the power supply system in Addis Ababa?

Transmission network supplying power to Addis Ababa Capital Region consists of 400kV, 230kV, 13 kV and 45kV. Distribution network consists of 33kV and 15kV middle voltage distribution line by step down transformer rated at 132/33kV, 132/15kV 50 Hz using 3-phase 4-wire distribution line.

What is the power demand in Addis Ababa?

With such a smooth economic growth, construction of industrial sector and housing are developing rapidly and the power demand in Addis Ababa administration area and an approximate 50km radius area around the city (hereinafter called "Addis Ababa Capital Region") is expected to increase from 800MW in 2014 to 3,576MW in 2034 c.

How is the distribution network implemented in Addis Ababa?

The distribution network in Addis Ababa is implemented with 15kV or 33kV on the primary side (medium voltage) and 400V/230V on the secondary side (low voltage), and most of the facilities are formed by overhead distribution.

What is a distributed collaborative optimization approach for 5G base stations?

In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G base stations considering communication load demand migration and energy storage dynamic backup is established.



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[\[PDF\] Planning of Small Cells in Unlicensed Band for Addis Ababa](#)

Oct 24, 2018 · In this paper, we present multiobjective optimization (MO) based planning work for efficient deployment of SC-U in 5GHz for an Addis Ababa Meskel-Square deployment scenario.

[Capacity Enhanced-Energy Efficient Base Station Deployment ...](#)

For this purpose, small cell deployment underlay to the existing macro BS is used in outdoor scenario in 2x2 square kilometer area located in Addis Ababa. Candidate locations for the ...



[Study on Power Feeding System for 5G Network](#)

Oct 24, 2019 · Therefore, in 5G networks, high-frequency resources will no longer use macro base stations, micro-cells become the mainstream, and the small base stations will be used as ...

Ethio Telecom Launches Third AI-Powered Super-Fast EV Charging Station

Nov 28, 2025 · Ethio Telecom has opened its third AI-powered EV charging station in Addis Ababa, expanding total capacity to 48 vehicles. Equipped with 180KWh chargers, AI ...



[Distribution network restoration supply method considers 5G base](#)

Feb 15, 2024 · This work explores the factors that affect the energy storage reserve capacity of 5G base stations: communication volume of the base station, power consumption of the base ...



Collaborative optimization of distribution network and 5G base stations

Sep 1, 2024 · In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G ...



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