

Does a stationary hybrid energy storage system work in Metro traction substations?

This paper focuses on the configuration of a stationary hybrid energy storage system, located in metro traction substations in turn located inside Metro stations. The recuperation energy of the metro braking phase is then reused to feed stationary electrical loads of metro stations.

What is a hybrid energy storage system?

A hybrid Energy Storage System termed MetroHES foresees the storage and reuse of regenerative train braking energy through an active combination of batteries covering base power electrical consumer loads in Metro stations and supercapacitors able to receive the energy power peaks from train braking.

Who is a potential funding source for a sustainable Metro project?

The European Investment Bank (EIB) as well as ERDF is considered as potential funding sources for this exemplary sustainable investment. The large scale of metro operations requires a substantial amount of electrical energy.

Abstract: This paper investigates the effect of adding energy storage to a metro DC microgrid in order to recuperate otherwise dissipated energy produced through regenerative braking. For ...

During the next 15 years, around 200 km of tunnels and 68 new metro stations will be built around Paris to increase the capacity of the existing metro and the transport efficiency.

Guan et al. conducted a statistical analysis of the electricity consumption of metro stations in China and found that the annual electricity consumption of underground ...

In this paper, the feasibility of using stationary super-capacitors to store the metro network regenerative braking energy is investigated. In order to estimate the required ...

Metro traction power measurements sizing a hybrid energy storage system utilizing trains regenerative braking ... substation of otherwise unused train braking energy, with a typical Metro station ...

Finally, HTC bearings will be used in flywheel energy storage in a "Best in Class" metro station because of their very low power loss and high force in collecting kinetic energy. 2.6 Insulation ...

In order to ensure passengers' safety in an eco-friendly way, Metro Railway is going to install Battery Energy Storage System (BESS) at the Central sub-station of Blue Line very soon. This new system, an ...

Download scientific diagram | Energy consumption in metro systems. from publication: Evaluation of Strategies to Reducing Traction Energy Consumption of Metro Systems Using an Optimal ...

1090 Samira Rajabi and Salwa Behairy / Procedia Engineering 145 ( 2016 ) 1088 - 1095 capacity of the metro station. In a "Best in Class" metro-station design, we will use the side platform ...

The paper describes the measuring systems and methodology for acquiring traction power measurements on the on-board traction systems of two metro trains and three 750 V DC rectifier substations in ...

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